Unit One

Exercise 1   **The set of natural numbers**

1 Underline the natural numbers from the following numbers :

$15 , 6.2 , 0 , 417 , \dfrac{4}{5} , 0.7$ and 91328

2 Complete by using the suitable symbol from $\in , \notin , \subset$ or $\not\subset$:

(a) 📖 2 .... $\mathbb{N}$

(b) 📖 $\{2\}$ .... $\mathbb{N}$

(c) $\{0\}$ .... $\mathbb{N}$

(d) 📖 0 .... $\mathbb{N}$

(e) 📖 22.22 .... $\mathbb{N}$

(f) 📖 $\{55\}$ .... $\mathbb{N}$

(g) 📖 $\{2 , 4 , 6\}$ .... $\mathbb{N}$

(h) 📖 $\{2 , 0.2\}$ .... $\mathbb{N}$

(i) $\varnothing$ .... $\mathbb{N}$

(j) $\dfrac{15}{3}$ .... $\mathbb{N}$

(k) 📖 $\dfrac{3}{4}$ .... $\mathbb{N}$

(l) $\{3 , 4 , 5 , \cdots , 30\}$ .... $\mathbb{N}$

(m) $\{3 , 7\} \cap \{3 , 5\}$ .... $\mathbb{N}$

(n) 📖 $\{1 , 3\} \cap \{2 , 4\}$ .... $\mathbb{N}$

(o) $\{0\} \cup \{1 , 2 , 3 , \cdots\}$ .... $\mathbb{N}$

(p) $\{0\}$ .... the set of counting numbers.

(q) $\{1 , 2 , 3\} \cup \{2 , 5 , 7\}$ .... the set of counting numbers.

(r) The number of people in the world .... $\mathbb{N}$

3 Mark (✓) for the true statements and (✗) for the false ones :

(a) 📖 $7.2 \in \mathbb{N}$ (   )

(b) $\dfrac{2}{3} \in \mathbb{N}$ (   )

(c) 📖 $\{0\} \subset \mathbb{N}$ (   )

(d) $\{19\} \subset \mathbb{N}$ (   )

(e) $\varnothing \not\subset \mathbb{N}$ (   )

(f) $475\,621 \in \mathbb{N}$ (   )

(g) $\{1 , 4 , 5\} \subset \mathbb{N}$ (   )

(h) $\{0 , 1 , 2 , 3 , \cdots , 100\} \subset \mathbb{N}$ (   )

(i) $\{0\}$ is a subset of the counting numbers.   (   )

(j) 📖 $\{0\} \cup \{1 , 2 , 3\} = \mathbb{N}$ (   )

(k) $\{5, 8\} \cap \{4, 9\} \subset \mathbb{N}$ ( )

(l) $\{0, 1, 2\} \cup \{3, 4, 5, \cdots\} = \mathbb{N}$ ( )

(m) 📖 Weight of any thing in kgs. $\in \mathbb{N}$ ( )

(n) 📖 Number of pages of a book $\in \mathbb{N}$ ( )

(o) 📖 The set of natural numbers is infinite. ( )

4 Complete each of the following to get a true sentence :

(a) 📖 $E \cup O = $ ....

(b) 📖 $E \cap O = $ ....

(c) 📖 $E - O = $ ....

(d) $O - E = $ ....

(e) $\mathbb{N} \cap O = $ ....

(f) $\mathbb{N} \cap E = $ ....

(g) 📖 $\mathbb{N} \cap P = $ ....

(h) 📖 $E \cap P = $ ....

(i) $\mathbb{N} \cup E = $ ....

(j) 📖 $\mathbb{N} \cup O = $ ....

(k) $P \cup \mathbb{N} = $ ....

(l) $E - \mathbb{N} = $ ....

(m) $\mathbb{N} - O = $ ....

(n) $P - O = $ ....

(o) 📖 $\mathbb{N} \cap C = $ ....

(p) $C \cup \mathbb{N} = $ ....

(q) 📖 $\{15, 6, 0, 4\} \cap \mathbb{N} = $ ....

(r) $O \cap \{0, 1, 2\} = $ ....

(s) $E \cap \{0, 1, 2\} = $ ....

Challenge

5 Complete using [$\in$ or $\notin$] :

(a) $(15.7 + 9.3)$ .... $\mathbb{N}$

(b) $\left(2.4 + \dfrac{3}{5}\right)$ .... $\mathbb{N}$

(c) (15.2×8.5) .... $\mathbb{N}$

(d) $\left(214.25 - 15\dfrac{1}{4}\right)$ .... $\mathbb{N}$

(e) $\left(21 \div \dfrac{7}{11}\right)$ .... $\mathbb{N}$

(f) (12×4.1) .... $\mathbb{N}$

Unit One

Exercise 2 Ordering and comparing natural numbers

1 Write down the represented set on the following number lines :

(a) ← 0 1 2 3 4 5 6 7 →

(b) 📖 ← 0 1 2 3 4 5 6 7 →

(c) ← 0 1 2 3 4 5 6 7 →

(d) 📖 ← 0 1 2 3 4 5 6 7 →
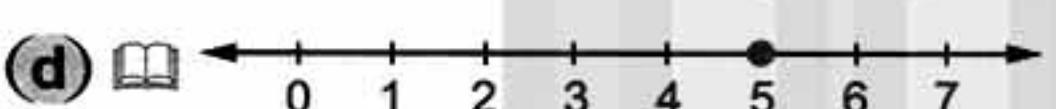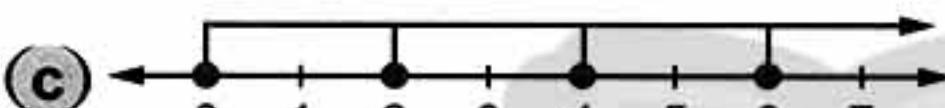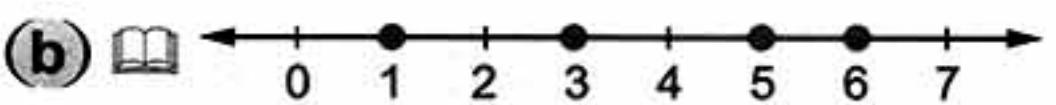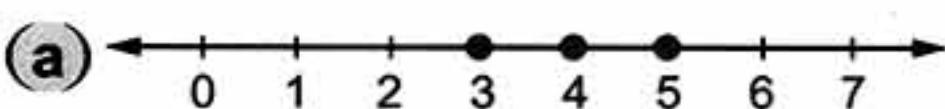
2 Represent each of the following sets on the number line :

(a) $\{1 , 4\}$

(b) 📖 $\{0 , 2 , 3\}$

(c) $\{4\}$

(d) 📖 $\{1 , 2 , 3 , 5\}$

(e) $\{3 , 4 , 5 , …\}$

(f) $\{1 , 3 , 5 , 7 , …\}$

(g) $\{7 , 9\} \cup \{8\}$

(h) $\{2 , 4 , 7 , 19\} \cap \{2 , 4 , 5 , 9\}$

(i) $\{4 , 8 , 9 , 10\} - \{8 , 10\}$

3 📖 Represent on the number line $X \cup Y$, where :
$X = \{1 , 2 , 3 , 5\}$, $Y = \{5 , 6 , 7\}$, then find $X \cap Y$

4 Write, using the listing method , each of the following sets of numbers and represent each of them on the number line :

(a) The set of counting numbers less than 4

(b) 📖 The set of natural numbers less than 7

(c) The set of natural numbers greater than 3

(d) 📖 The set of natural numbers between 1 and 4

(e) The set of natural numbers greater than 3 and less than 7

18

(f) The set of natural numbers less than or equal to 5

(g) 📖 The set of natural numbers greater than or equal to 4

(h) 📖 The set of odd numbers.

(i) 📖 The set of even numbers.

(j) The set of even numbers between 2 and 6

(k) The set of odd numbers less than 9

(l) The set of prime numbers less than 10

(m) The set of natural numbers between 3.45 and 7.9

(n) The set of natural numbers greater than $4\frac{1}{3}$ but less than 6.9

(o) The set of natural numbers which are not less than 2 and not greater than 7

(p) 📖 The set of prime factors of 30

(q) The set of natural numbers divisible by 1

5 If x is an even number included between 2 and 10 , write down the values of x , then represent the values of $\frac{x}{2}$ on the number line.

6 If x is a prime number included between 1 and 5 , write down the values of x , then represent the values of $\frac{12}{x}$ on the number line.

7 Put (✓) or (✗) :

(a) The natural number between 37 and 39 is 38   (   )

(b) There is only one natural number between 99 and 101   (   )

(c) There is no natural numbers between 499 and 501   (   )

(d) There are exactly two natural numbers between 3 and 5   (   )

(e) The least natural number that is greater than 7 but less than 24 is 23   (   )

(f) There is no natural numbers between 3.4 and 4.4   (   )

(g) There is one natural number between 2.8 and 3   (   )

(h) 📖 The greatest natural number is milliard.   (   )

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8 Complete :

(a) 📖 *The smallest natural number is* ·········

(b) 📖 The smallest counting number is ·········

(c) The least even number is ·········

(d) The least odd number is ·········

(e) The least prime number is ·········

(f) The least natural number between 4 and 9 is ·········

(g) The greatest natural number between 0 and 10 is ·········

(h) The natural number between 7 and 9 is ·········

(i) The natural number greater than 8 but less than 10 is ·········

(j) The natural number between $\frac{9}{3}$ and $\frac{15}{3}$ is ·········

(k) The greatest 2-digit natural number is ·········

(l) The natural numbers between $5\frac{1}{3}$ and $9\frac{2}{7}$ are ·········

(m) Between 10 and 103 there are ········· natural numbers.

9 📖 Rewrite the following statements using [> , ≥ , < or ≤]:

(a) X is less than 8

(b) X is greater than 8

(c) 8 is less than X

(d) 8 is greater than X

(e) Z is greater than or equal to L

(f) 9 is less than or equal to L

(g) 9 is greater than or equal to L

(h) Z is between 9 and 17

10 Write the following sets using the listing method and represent them on the number line :

(a) 📖 X = {a : a ∈ ℕ , where a is between 0 , 4}

(b) X = {a : a ∈ ℕ , where a is less than 3}

(c) 📖 Z = {a : a ∈ ℕ , a < 6}

(d) Y = {a : a ∈ ℕ , a ≤ 5}

(e) 📖 Y = {a : a ∈ ℕ , a ≥ 3}

(f) Z = {a : a ∈ ℕ , a > 4}

(g) 📖 M = {a : a ∈ ℕ , 2 ≤ a ≤ 5}

(h) L = {a : a ∈ ℕ , 3 < a ≤ 6}

(i) B = {b : b ∈ ℕ , 7 > b > 4}

(j) D = {d : d ∈ O , 3 ≤ d < 9}

11 If U = $\{x : x \in \mathbb{N}, 1 \le x \le 8\}$, X = $\{2, 3, 4, 5\}$, Y is the set of factors of 6, then find each of the following and represent it on the number line:

(a) X ∩ Y

(b) X ∪ Y

(c) X − Y

(d) $\grave{Y}$

(e) $(Y − X) \cap \grave{X}$

12 📖 Find the ascending order of : **5, 0, 2, 4, 1** and represent then on a number line.

13 Write the descending order of : 456, 546, 465, 654, 564, 645

14 📖 Write [< , > or =]:

(a) 908 ········· 9008

(b) 5075 ········· 5057

(c) 2239 ········· 2229

(d) $x + 18$ ········· $x + 17$, where $x \in \mathbb{N}$

(e) $x − 18$ ········· $x − 17$, where x is a natural number greater than 20.

(f) x ········· 75, where $x \in \{30, 21, 32, 33\}$

(g) y ········· 18, where y $\in \{20, 21, 22, 23, 24\}$

(h) z ········· 35, where z $\in \{35\}$

15 📖 If the following natural numbers a, b, c, d and e are represented on a number line as shown on the figure below:
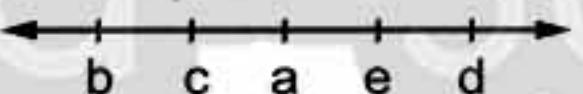
First : Complete using [< or >] and justify your answer :

(a) a ········· b because a is placed to the right of b

(b) b ········· c because b is placed to the left of c

(c) c ········· e because ··································

(d) e ········· b because ··································

(e) a ········· d because ··································

(f) c ········· d because ··································

Second : The ascending order is : ········· , ········· , ········· , ········· , ·········

Unit One

16 The following number line graph shows 4 numbers a , b , c and d :
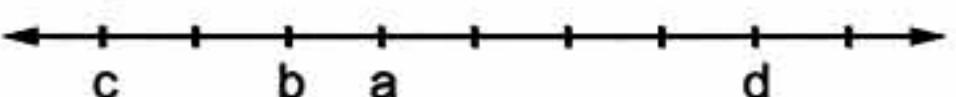
Complete with [< or >] :

(a) a .... b

(b) c .... d

(c) d .... a

(d) a c

(e) c .... b

(f) d .... b

17 📖 The greatest number of four consecutive natural numbers is $x + 7$
Find the other three numbers.

18 📖 The greatest number of five consecutive natural odd numbers is $y + 15$
Find the other four numbers.

19 📖 The middle number of three successive natural odd is y. Find the other two numbers. What is the least value of the number y ?

Challenge

20 📖 a , b , c and d are four natural numbers where , d > a , b < c , c < d , b < d , and b > a. Represent these numbers on a number line.

Unit Three

Exercise 1 — Area and its units - Areas of triangles

1 Find the area of △ ABC in each the following triangles:

(a) 📖

Triangle with height 6 cm from A to D, base CB = 10 cm.

(b) 📖

Right triangle, AB = 4 cm, BC = 6 cm.

(c) 📖

Right triangle at A, AC = 5 cm, AB = 7 cm.

(d) 📖

Triangle, AB = 4.2 cm, CD = 3.8 cm.

(e) 📖

Triangle, height AD = 2 cm, AC = 2.5 cm, base BC = 3 cm.

(f) 📖

Triangle, AC = 3.2 cm, CD = 4.4 cm, AB = 4.5 cm.

(g)

Triangle, AB = 4 cm, height AD = 2.7 cm, base BC = 6 cm.

(h)

Triangle, AD = 1.7 cm, AC = 5 cm, BC = 3 cm.

(i)

Right triangle, AC = 10 cm, BC = 8 cm, AB = 6 cm.
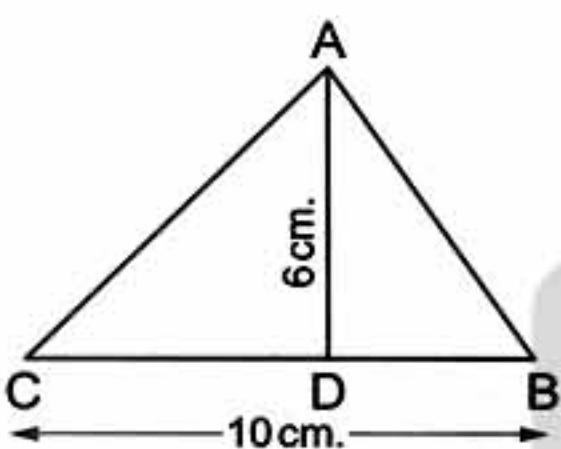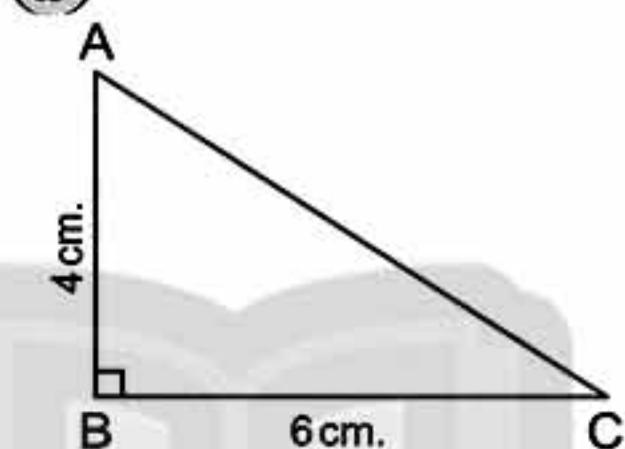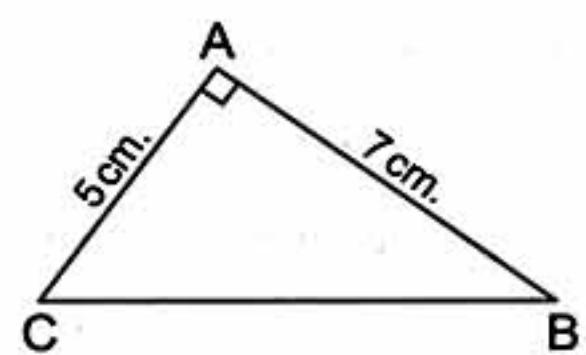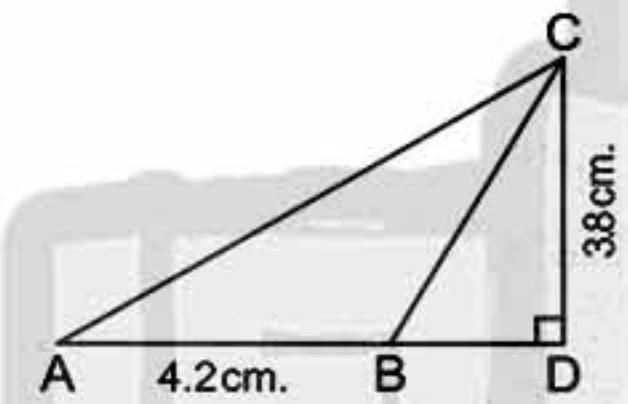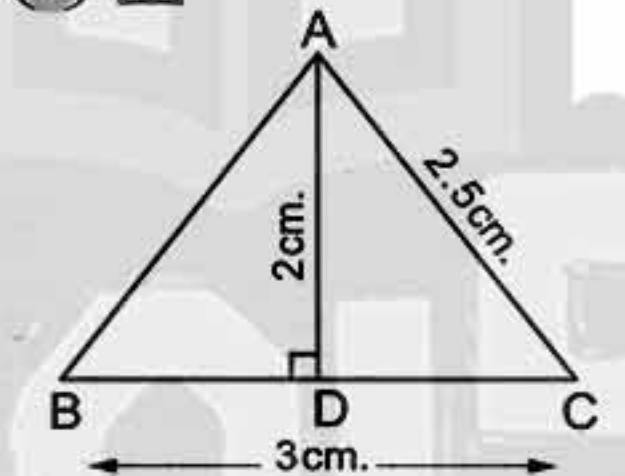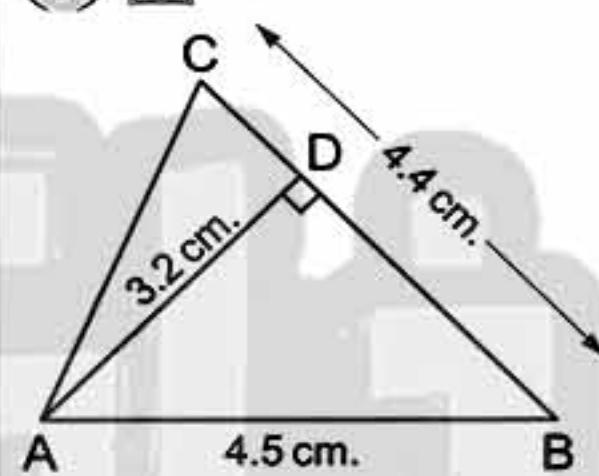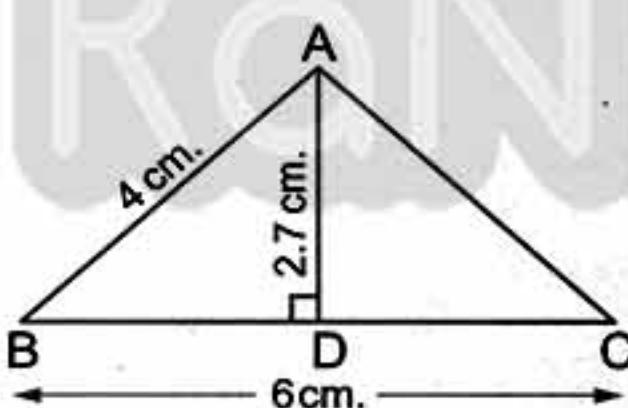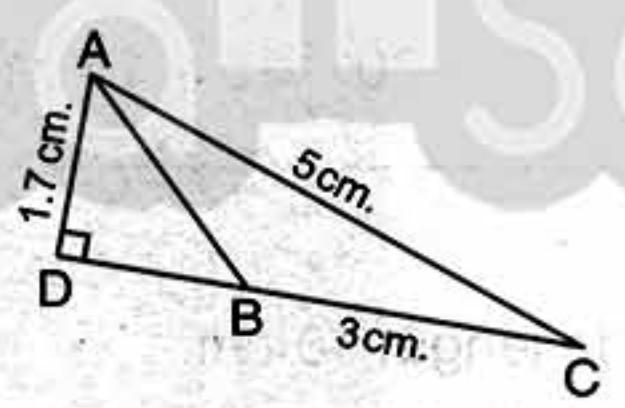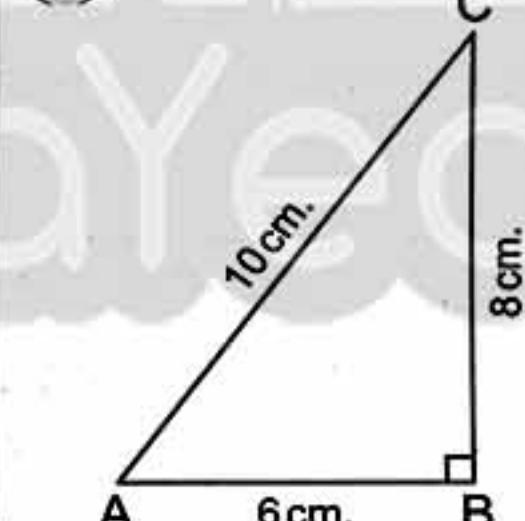
2 Find the area of a triangle whose base length = 4.2 m. and its corresponding height = 5.5 m.

3 If the area of a triangle is 60 cm.^{2} and the base length is 7.5 cm. , calculate its corresponding height.

4 The area of a triangle is 180 cm.^{2} , and the height is 45 cm. Find its corresponding base length.

5 📖 Complete the table :

Base length of △ in (cm.)	Height of △ in (cm.)	Area of △ in (cm.²)
12	9	....
10	....	25
....	8.2	24.6

6 Complete :

(a) The area of a triangle $= \frac{1}{2} \times$ .... $\times$ ....

(b) If the length of the base = 6 cm. and the corresponding height = 4 cm., then the area of this triangle = ... cm²

(c) If the area of a triangle is 30 cm.² and its base length is 6 cm. , then its corresponding height = ... cm.

(d) If the area of a triangle is 120 cm.² and its height = 1.2 dm. , then its corresponding base length = ... cm.

(e) If ABC is a right-angled triangle at B, and BC = 10 cm., AB = 8 cm., then its area = ... cm²

(f) If the perimeter of an equilateral triangle is 18 cm., and its area is 15 cm.² , then its height is .... cm.

(g) If the perimeter of an equilateral triangle is 27 cm. and its height is 7.8 cm. , then its area is .... cm²

7 A triangle is of base length 12 cm. and its corresponding height is 4 cm. less than its base length. Find the area of this triangle.

8 The base of a triangle is 14 cm. long and its corresponding height is $\frac{3}{7}$ of its base length. Find the area of the triangle.

9 If the area of a triangle is equal to the area of a square of side length 7 cm. Calculate the height of the triangle if its corresponding base length is 14 cm.

15
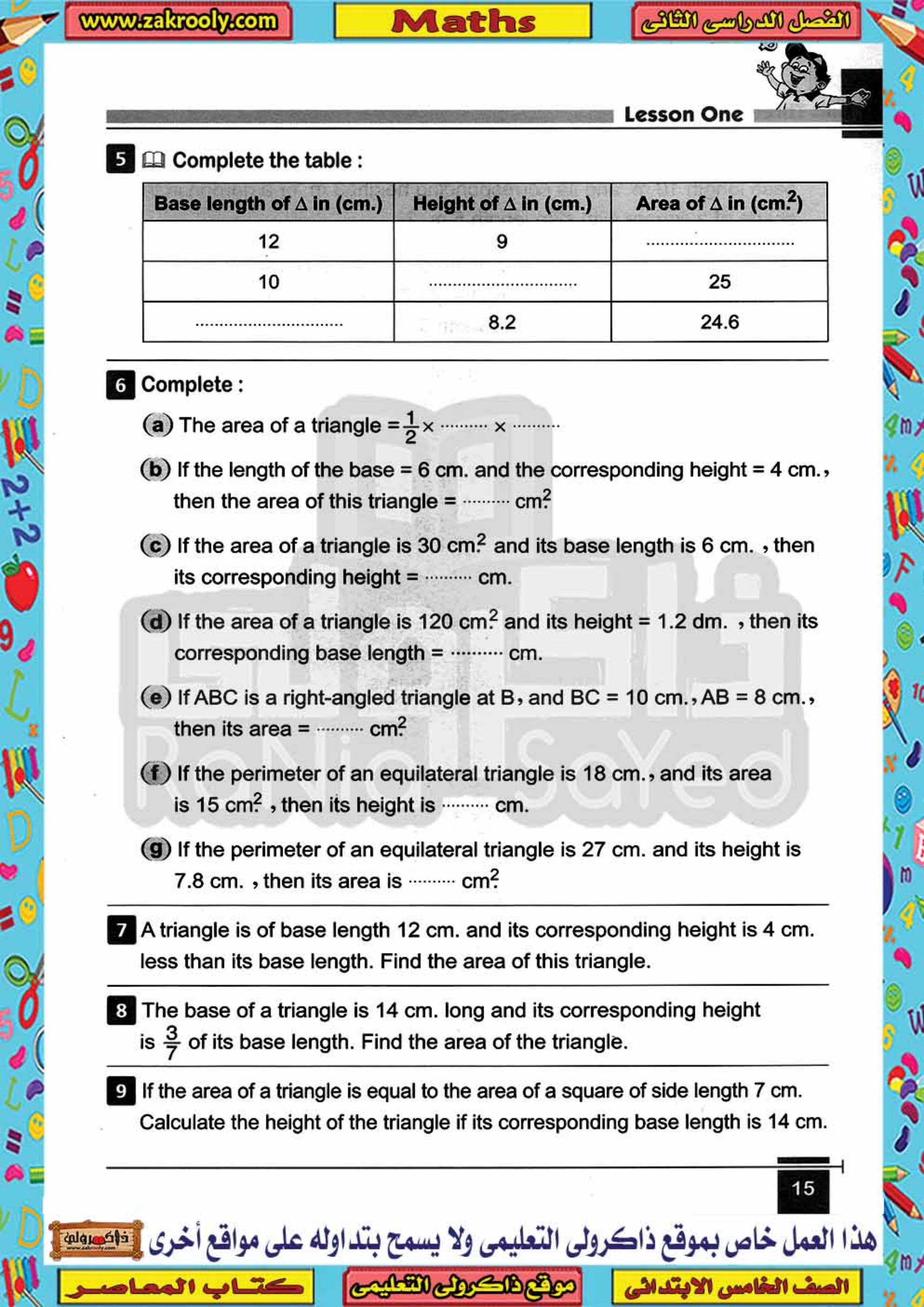
Unit Three

10 Which is larger in area, a piece of land in the shape of a triangle with base length 10 m. and its corresponding height 3 m. or a garden in the shape of a square with side length 5 m. ?

11 Which is larger in area, a garden in the shape of a triangle with base length 8 m. and its corresponding height 7 m. or a land in the shape of a rectangle with length 8 m. and width 3 m. ?

12 📖 Which area is greater : a triangle with base length = 3.25 dm. and its corresponding height = 4 dm. or a rectangle with dimensions of 26 cm. and 20 cm. ? Find the difference in cm².

13 📖 Find the area of △ ABC in each of the following :

(a)

A, 15 cm., D, C, 3.4 dm., B

(b)

A, 2 cm., C, 48 mm., B
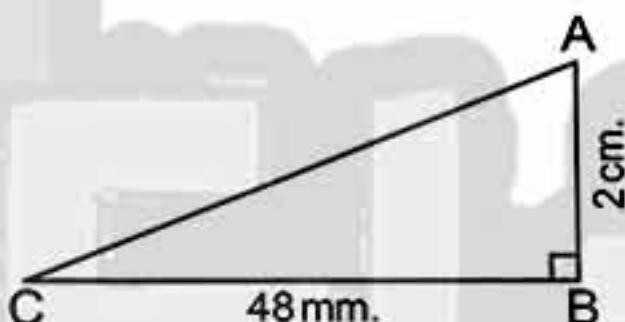
14 Find the area of each of the following figures :

(a)

D, 3 cm., C, 2 cm., A, E, B, 5 cm.

(b)

C, D, E, 8 cm., A, 4 cm., B

(c)

1.5 cm., 5 cm., 3 cm., 4 cm.

(d)

3 cm., 3 cm., 6 cm.

(e)

10 m., 32 m., 16 m., 24 m.

(f)

D, 6 cm., A, 4 cm., C, 3 cm., B
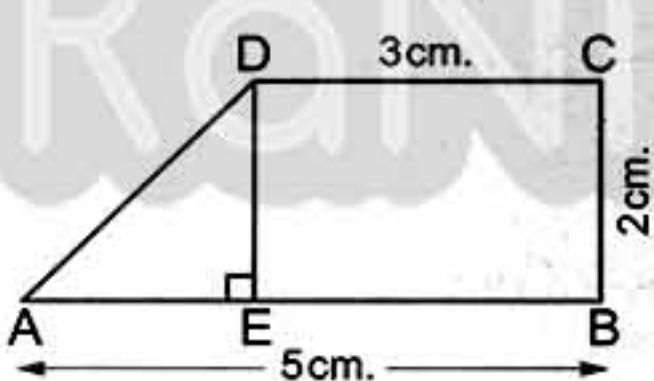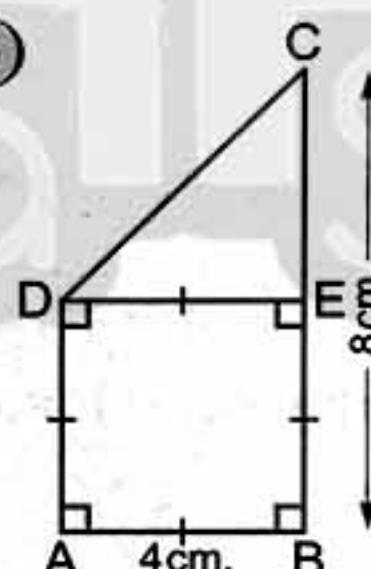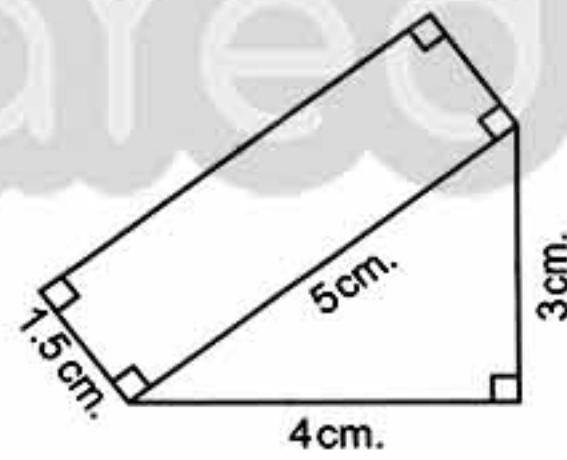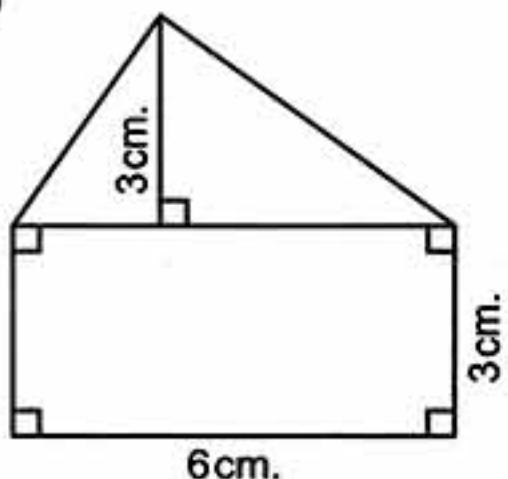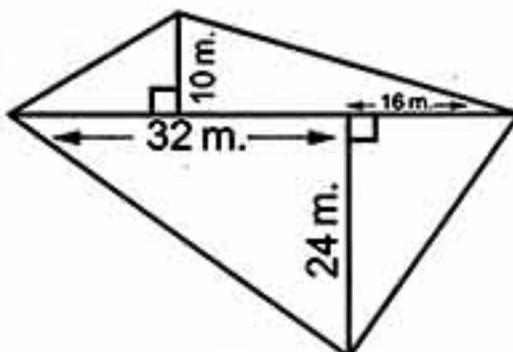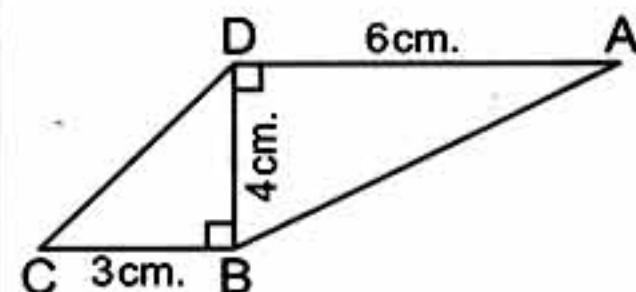
Lesson One

(g)
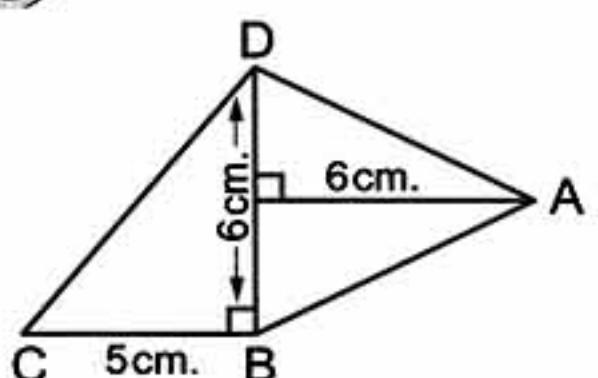
(h)
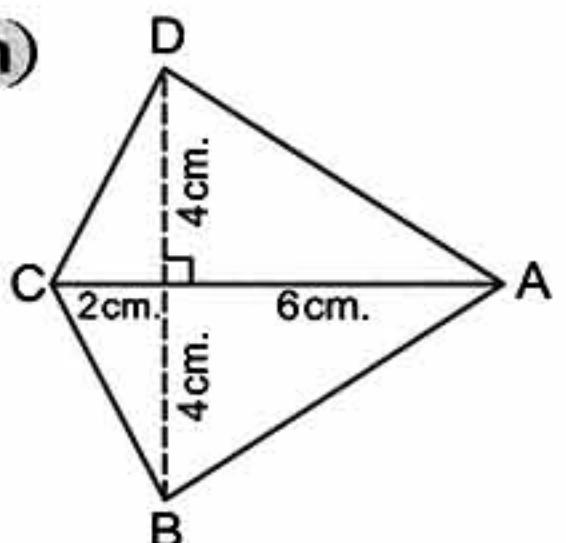
(i)
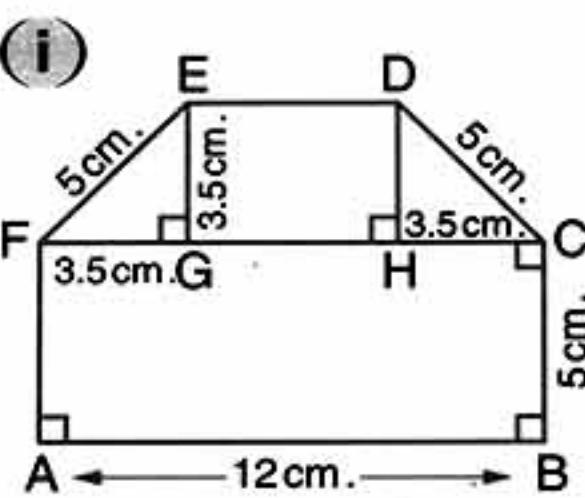
**15** Find the area of the shaded part of each of the following :

(a)
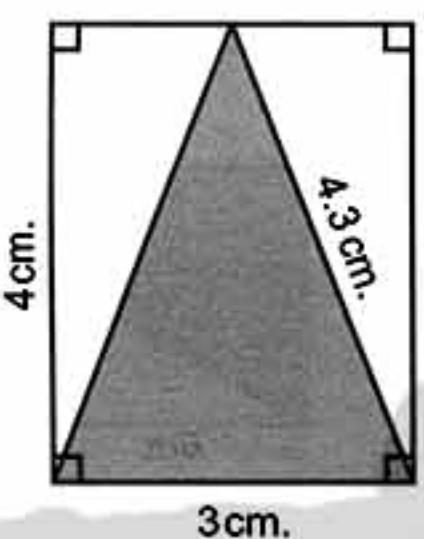
(b) 📖
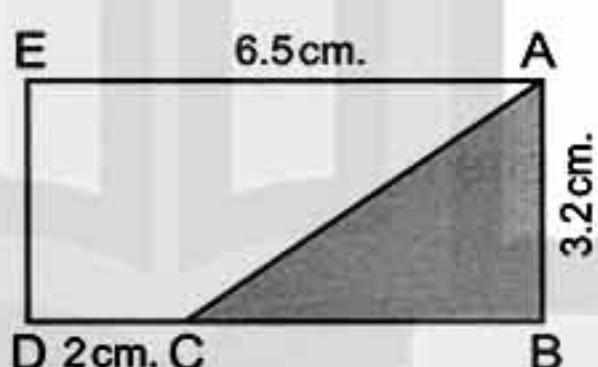
(c)
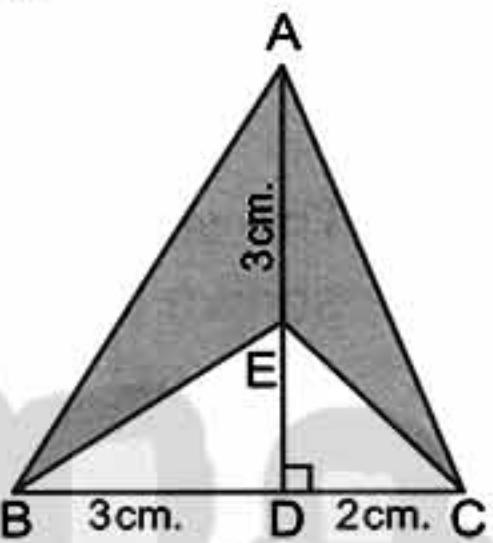
(d)
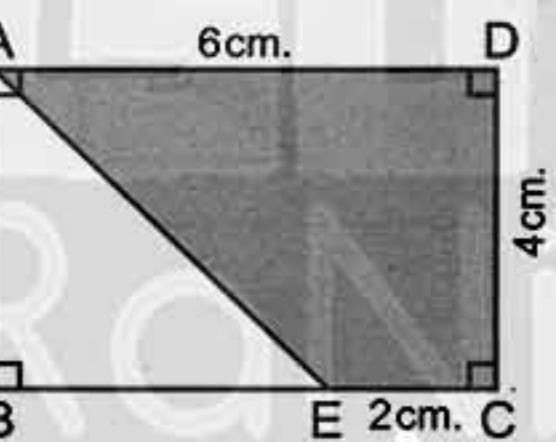
(e)
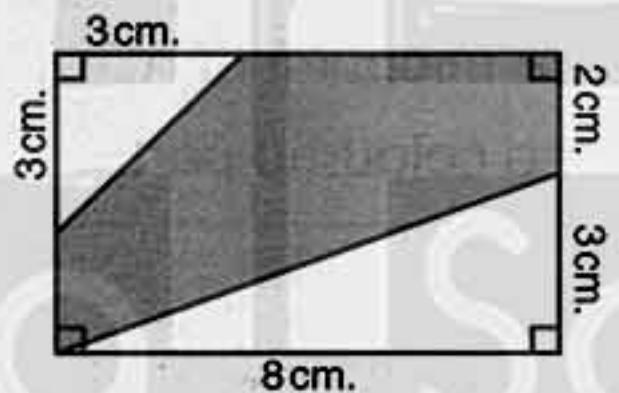
(f)
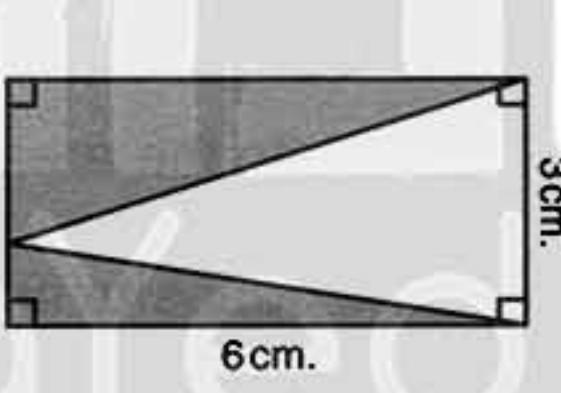
16 Complete :

(a) 📖 In the opposite figure :

The shaded area = ········· cm^2
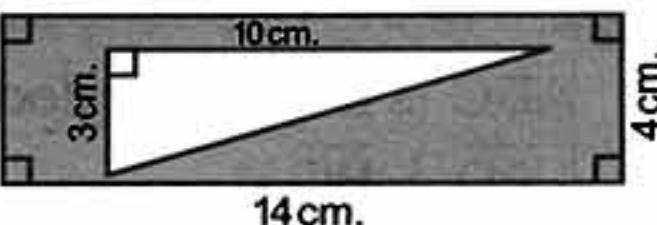
(b) In the opposite figure :

If AB = 4 cm.

, AD = 8 cm. and CE = 3 cm.

, then the shaded area = ········· cm^2

الصف الخامس الابتدائى | موقع ذاكرولى التعليمى | كتاب المعاصر
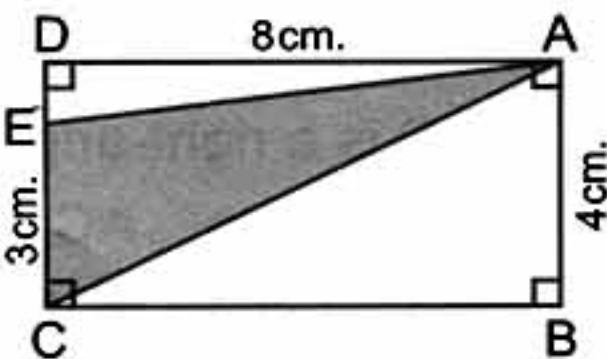
Unit Three

(c) In the opposite figure :

The shaded area = ·········· m^2
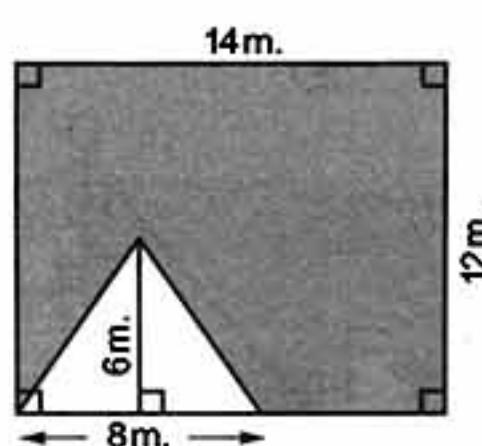
(d) The area of the coloured triangle shown in the opposite figure = ·········· cm^2
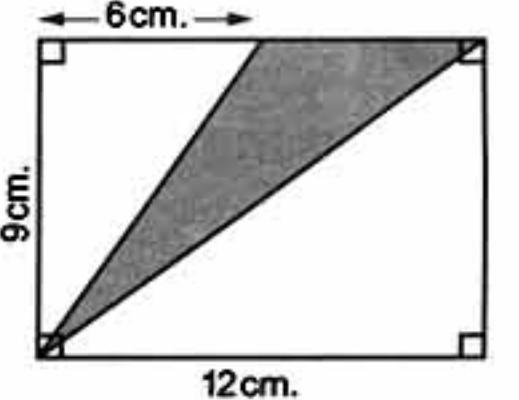
(e) The shaded area in the rectangle shown in the opposite figure is ·········· m^2
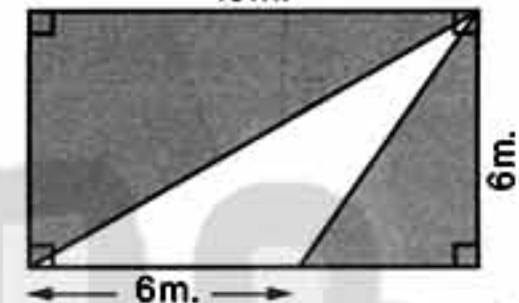
17 In the opposite figure :

$\overline{AD} \perp \overline{BC}$, BC = 4 cm.

AD = 3 cm. and E is the midpoint of $\overline{AD}$

Calculate the area of the coloured part.
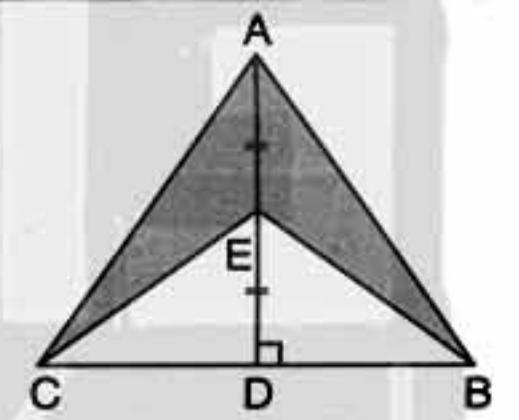
18 In the opposite figure :

ABCD is a rectangle of area 32 cm^2 and EC = 5 cm. Calculate the area of AECD
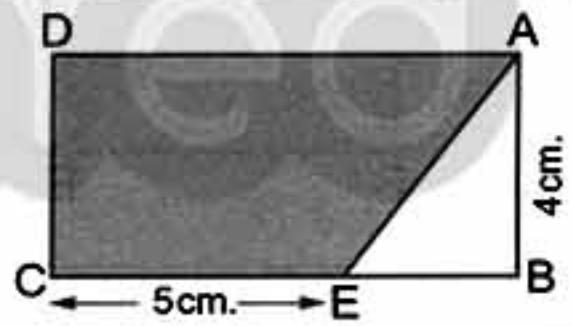
19 📖 In the opposite figure :

ABC is a right-angled triangle at A

, $\overline{AD} \perp \overline{BC}$,

Find the area of △ ABC and the length of $\overline{AD}$
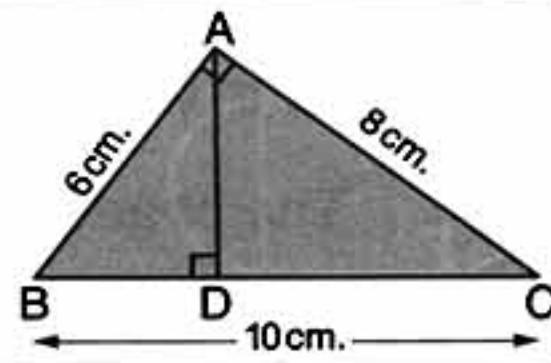
**20** In the opposite figure :

ABC is a right-angled triangle , $\overline{AD} \perp \overline{BC}$,

AB = 12 cm. , AC = 16 cm. and AD = 9.6 cm.

Find the area of the triangle ABC and the length of $\overline{BC}$
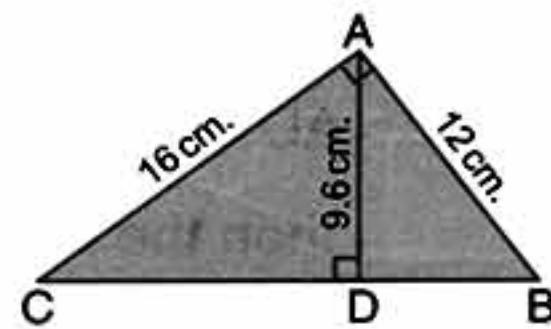
**21** In the opposite figure , find :

  (a) The area of △ ABC , where BE = 12 cm.

  (b) The length of $\overline{AD}$
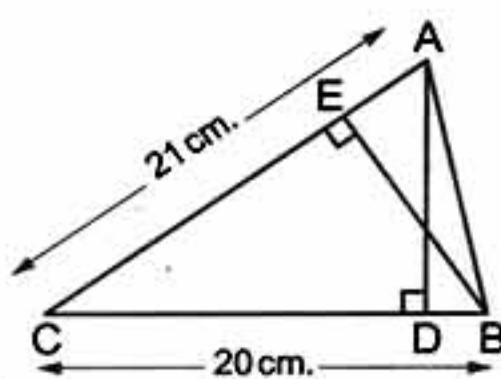
**22** In the opposite figure :

ABC is a triangle in which BC = 7 cm.
and CA = 10 cm. If $\overrightarrow{AD} \perp \overrightarrow{BC}$, $\overrightarrow{BE} \perp \overrightarrow{AC}$
and AD = 8 cm. , find the length of $\overline{BE}$
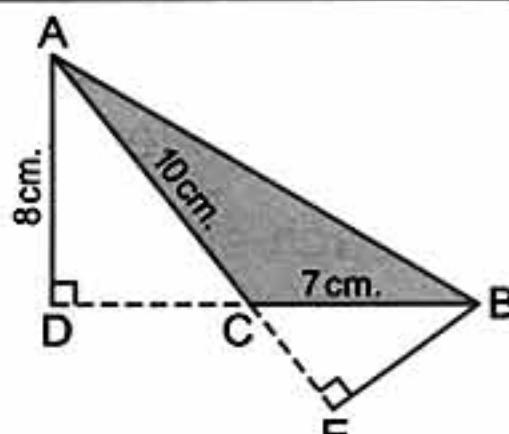
**23** 📖 In the opposite figure :

ABCD is a rectangle whose area is 828 cm^2 ,
E ∈ $\overrightarrow{BC}$, AD = 23 cm. and BE = 35 cm.
Find the area of △ DCE
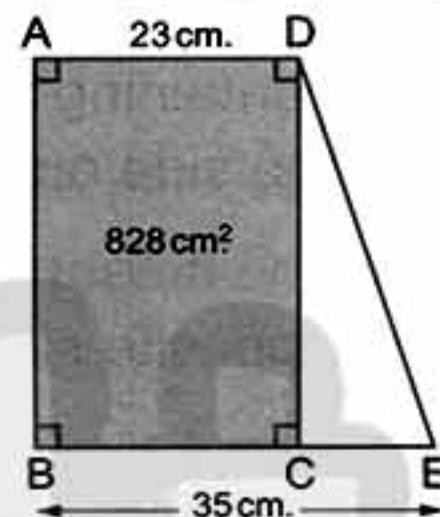
24 In the opposite figure :

If the perimeter of the rectangle ABCD
is 26 cm. , and AB = CE = 4 cm. ,
Find the area of △ ABE
and the area of the figure AECD
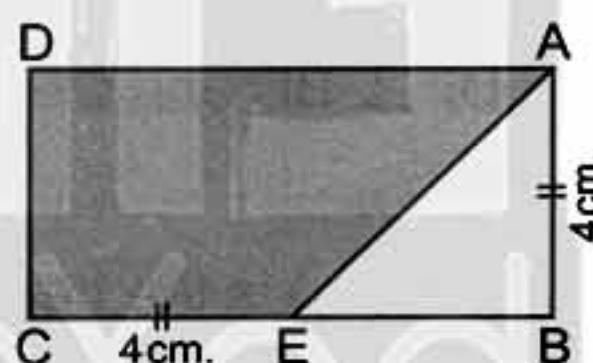
25 📖 In the opposite figure :

The side length of the square ABCD is 8 cm.
, X is the midpoint of $\overline{BA}$, Y is the midpoint of $\overline{DA}$,
Find the area of the three non coloured triangles ,
then conclude the area of △ XCY.
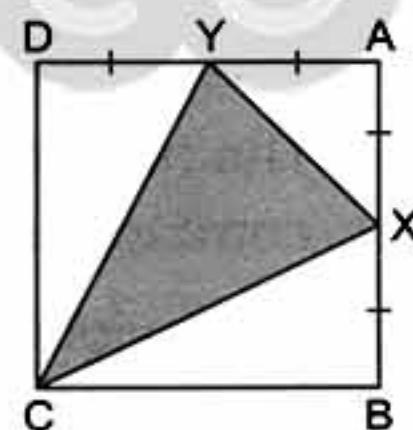
Challenge

26 In the opposite figure :

If AB = AC = 8 cm. , m (∠ B) = m (∠ C) = 90°
and DB = DC = 4 cm.,
Find the area of the opposite figure.
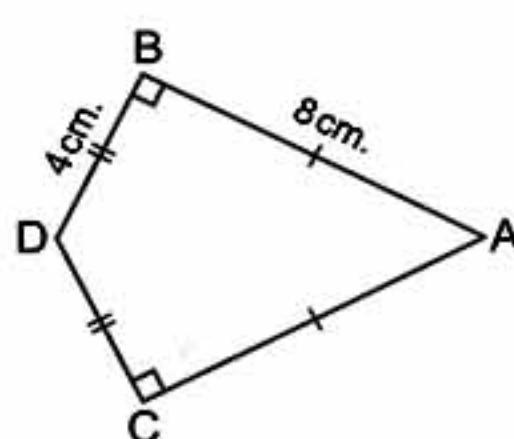
Unit Three

Exercise 2

Area of parallelogram

1 Find the area of each parallelogram :

(a) 📖

D ____ A

40 cm.

C ____ B

60 cm.

(b)

10 m.

10 m.

(c)

7 cm.

5.5 cm.

(d) 📖

28.4 cm.

5.8 dm.

2 Find the area of each of the following parallelograms :

(a)

3 m.

4 m.

10 m.

(b)

2 m.

3 m.

4 m.

(c)

2 m.

4 m.

3.2 m.

(d)

60 cm.

30 cm.

(e)

13 cm.

12 cm.

6 cm.

(f)

A   2.7 cm.   B

4.1 cm.

5.9 cm.

E ____ D ____ C

(g)

C

B

17.5 cm.

D

12 cm.

A   9.1 cm.   E

(h)

12 cm.

6 cm.

7.5 cm.
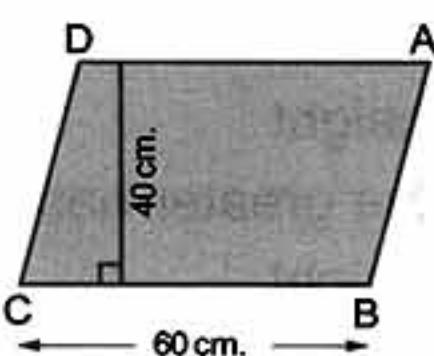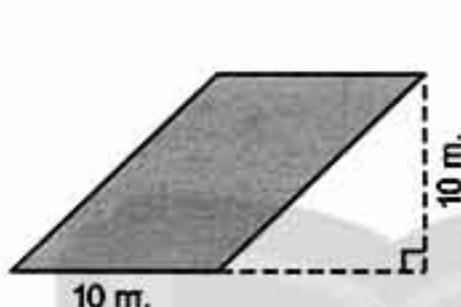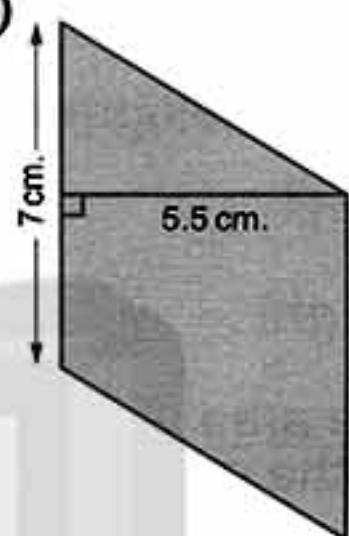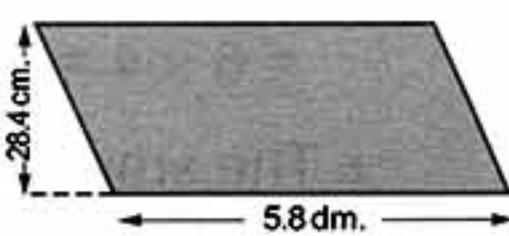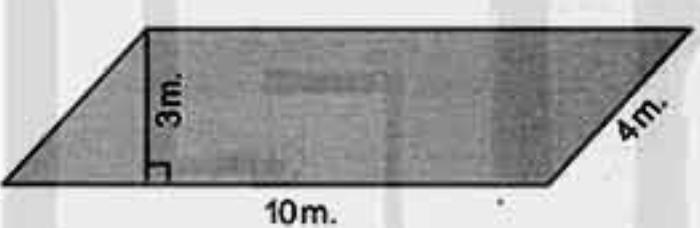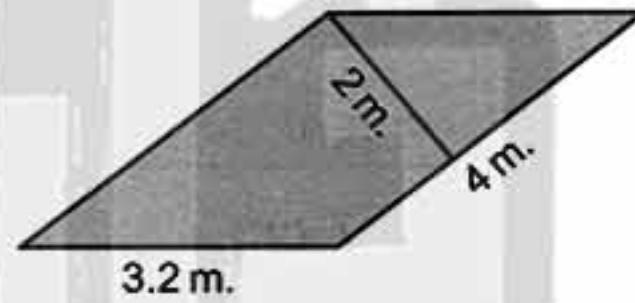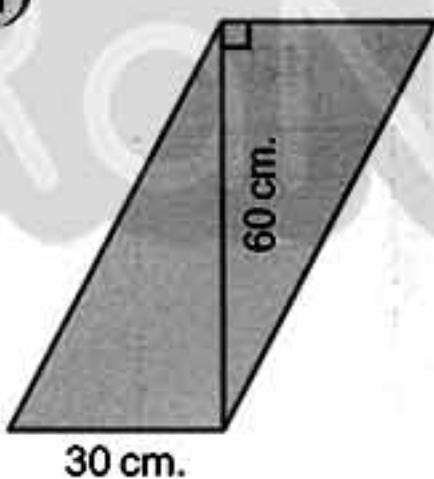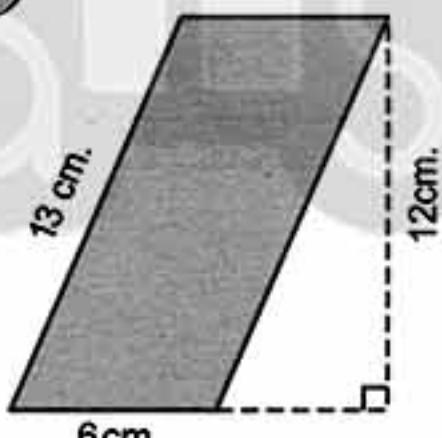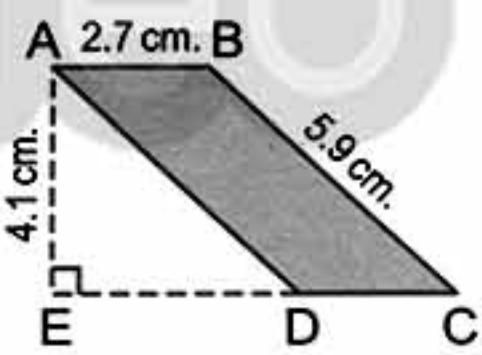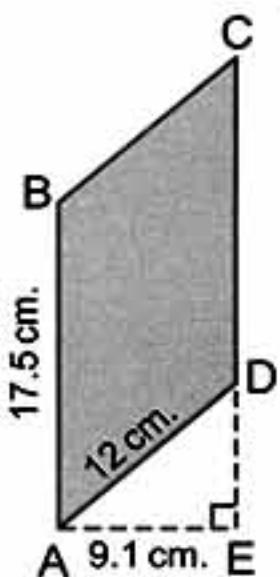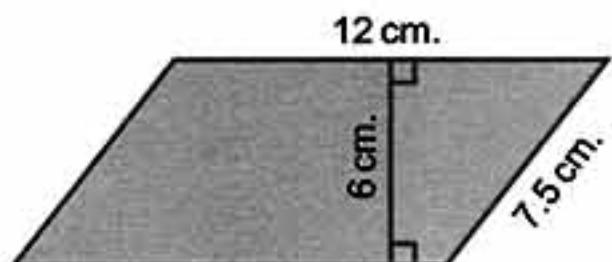
Lesson Two

3 A parallelogram has a base of length 14 m. and a corresponding height 9 m. Find its area.

4 If the height of a parallelogram is 34.6 cm. and the corresponding base is of length 15.2 cm. , what is the area of the parallelogram ?

5 📖 Find to the nearest hundreth the area of a parallelogram whose base length is 34.7 cm. and height 28.17 cm.

6 If the area of a parallelogram is 36 cm.^{2} and its height is 9 cm. , then find the length of the corresponding base of this height.

7 If the area of a parallelogram is 90 mm.^{2} and the length of the base is 9 mm. , find the height.

8 📖 Complete the table for parallelograms :

Length of the base in cm.	Corresponding height in cm.	The area in cm.^{2}
8	3.25	....
6.1	....	54.9
....	4.2	63

9 📖 Which area is greater : the area of a parallelogram whose base length is 15.7 cm. and height 9.4 cm. or the area of a triangle whose base length is 14 cm. and height 18 cm.

10 Find the area of the parallelogram ABCD if AB = 6 cm. , BC = 12 cm. , and the greater height is 4 cm.

الصف الخامس الابتدائى | موقع ذاكرولى التعليمى | كتاب المعاصر

Unit Three

11 📖 Complete to find the area of the colored figures :
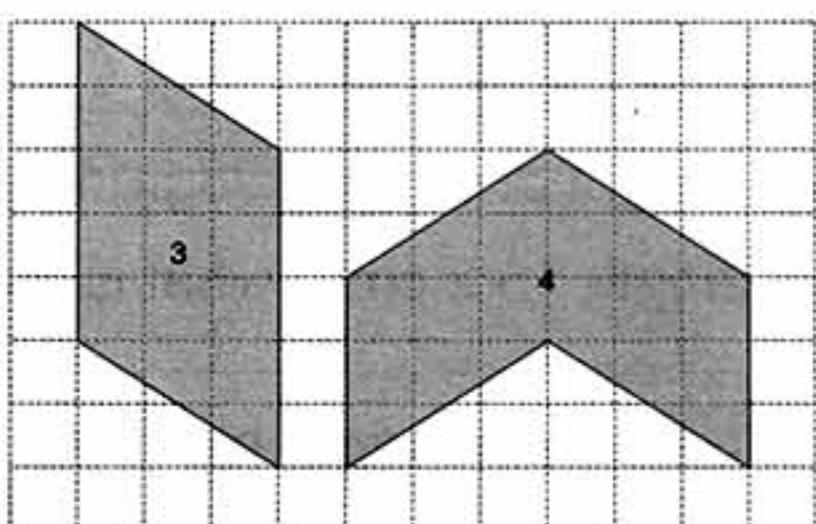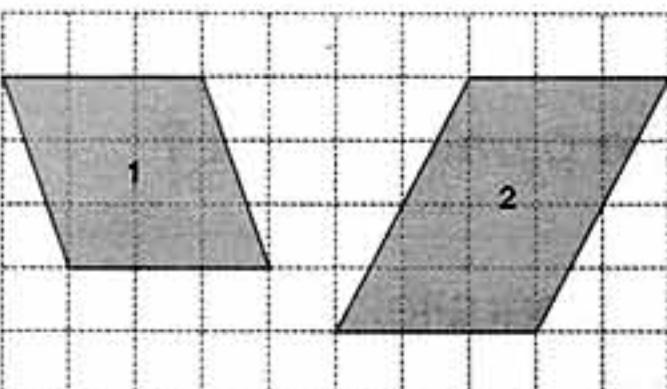
- Area of figure 1 = ·········· × ·········· = ·········· square units.
- Area of figure 2 = ·········· × ·········· = ·········· square units.
- Area of figure 3 = ·········· × ·········· = ·········· square units.
- Area of figure 4 = ·········· + ·········· = ·········· square units.

12 In the opposite figure , complete :

Area of the parallelogram

ABCD = BC × DF = ·········· cm²

also , area of the parallelogram = ·········· × DE

deduce the length of $\overline{DE}$
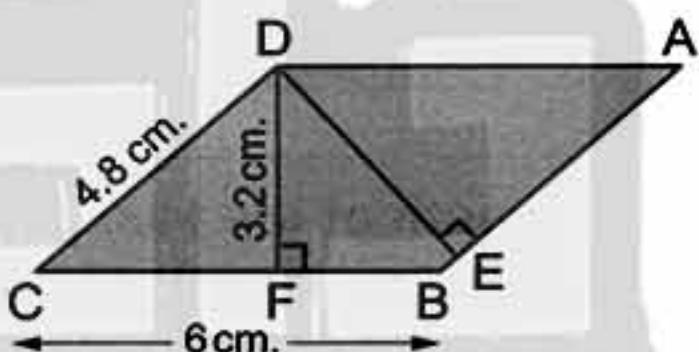
13 In the opposite figure :

Find the area of the parallelogram ABCD ,

then find the length of $\overline{BC}$
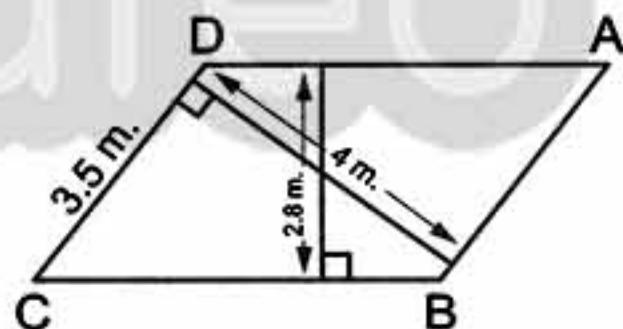
14 📖 In the opposite figure :

$\overrightarrow{AY}$ // $\overrightarrow{BX}$, ABCD is a parallelogram

and EFXY is a rectangle

Compare the area of the parallelogram

and the area of the rectangle.
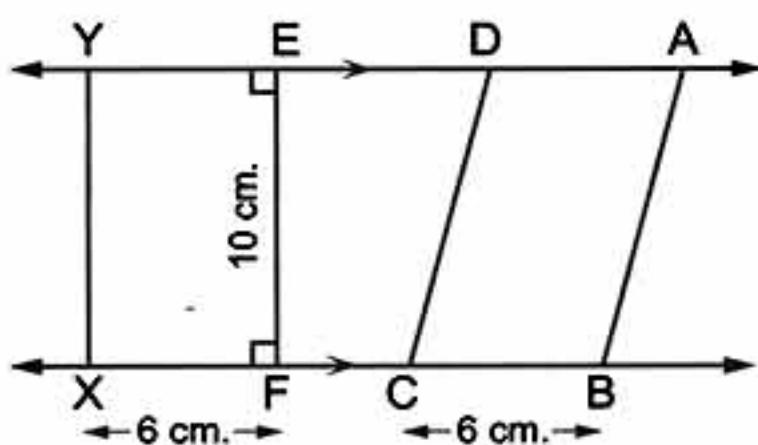
15 📖 In the opposite figure : Complete :

ABCD is a parallelogram where ,

BC = 12 cm. , AD = ·········· cm. ,

AM = ·········· cm.

the area of the parallelogram ABCD = ·········· cm²

the area of the triangle ABM = ·········· cm²

the area of the figure MBCD = ·········· cm²

(Figure: parallelogram with D, M, A on top, C, B on bottom; 7 cm. height on left, 12 cm. base at bottom)
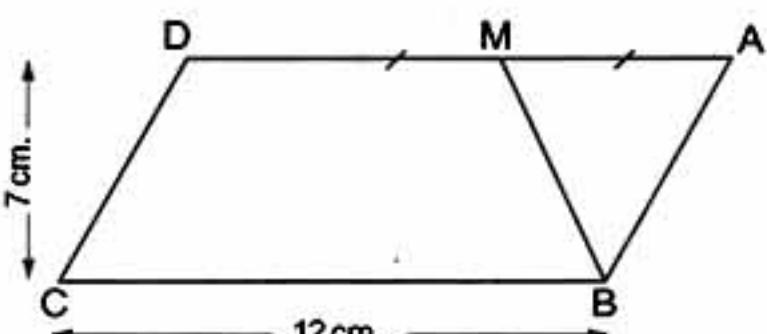
16 The length of the base is equal to the corresponding height in a parallelogram. What is the base length if the area of the parallelogram is 81 cm.² ?

17 Find the area of the shaded part :

(a)
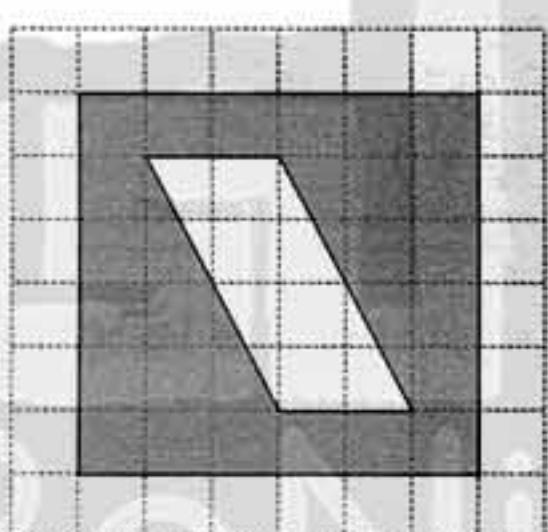
(b)
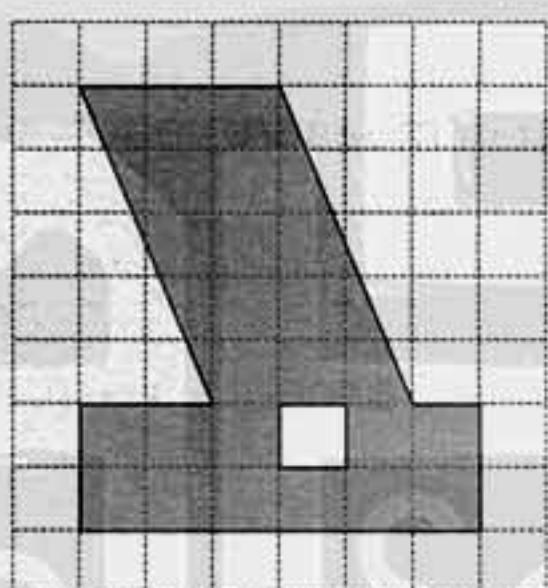
(c)
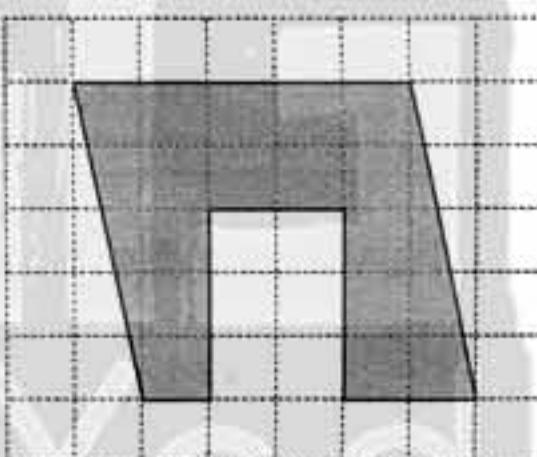
Challenge

18 What happens to the area of a parallelogram if its height is doubled ?

19 ABCD is a parallelogram of area 375 cm² , E is a point on $\overline{CD}$, find the area of the triangle AEB

**20** 📖 Patterns : Khaled drew parallelograms this way : the first with base length = 2 cm. and height = 2 cm. the second with base length = 2 cm. and height = 4 cm. the third with base length = 2 cm. and height = 8 cm. and continued with this pattern. Find the area of the eighth parallelogram according to his pattern.

Sheet **1**   On lesson **1** unit **1**

1 Underline the natural numbers from the following numbers :

$$4 \ , \ 7 \ , \ 3.3 \ , \ 0 \ , \ \frac{7}{5} \ \text{and} \ 1$$

5

2 Complete using "$\in$, $\notin$, $\subset$ or $\not\subset$" :

(a) $\left\{ 1 \ , \ \frac{1}{2} \right\}$ ·········· $\mathbb{N}$ (b) 100 ·········· $\mathbb{N}$

(c) 23.4 ·········· $\mathbb{N}$ (d) E ·········· $\mathbb{N}$

(e) $\varnothing$ ·········· $\mathbb{N}$

5

3 Complete :

(a) $\{0\} \cap E =$ ··········

(b) $\{2 \ , \ 3 \ , \ 4 \ , \ 5 \ , \ 6\} \cap O =$ ··········

(c) $\mathbb{N} - O =$ ··········

(d) $E \cap O =$ ··········

(e) $\mathbb{N} \cup$ the set of counting numbers = ··········

5

4 Put ($\checkmark$) for the true statement and ($\times$) for the incorrect one :

(a) $2.3 \in \mathbb{N}$ ( )

(b) $E \cup O = \varnothing$ ( )

(c) $\mathbb{N} - E = O$ ( )

(d) $P \cap E = \{2\}$ ( )

(e) $\{0\} \subset E$ ( )

5

5 Choose the correct answer :

(a) $\mathbb{N} - C =$ ··········   ($\varnothing$ *or* $\{0\}$ *or* E *or* O)

(b) $\{1 \ , \ 2 \ , \ 3\} \cap E =$ ··········   (2 *or* $\{1\}$ *or* $\{2\}$ *or* $\{2 \ , \ 3\}$)

(c) One million ·········· $\mathbb{N}$ ($\in$ *or* $\notin$ *or* $\subset$ *or* $\not\subset$)

(d) The smallest odd number is ··········   (0 *or* 1 *or* 2 *or* 3)

(e) $E \cap \mathbb{N} =$ ··········   ($\varnothing$ *or* 0 *or* $\mathbb{N}$ *or* E)

5

6

Sheet 2

From lesson **1** unit **1**
to lesson **2** unit **1**

1 Write down the represented set on the following number lines :

(a)

0 1 2 3 4 5 6 7

(b)

0 1 2 3 4 5 6 7 8 9

(c)

0 1 2 3 4 5 6 7 8

(d)

0 1 2 3 4 5 6 7 8
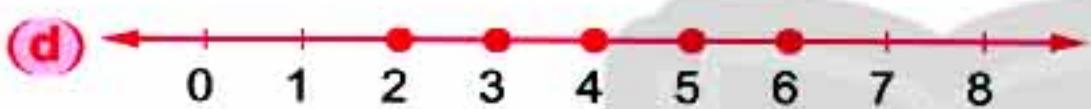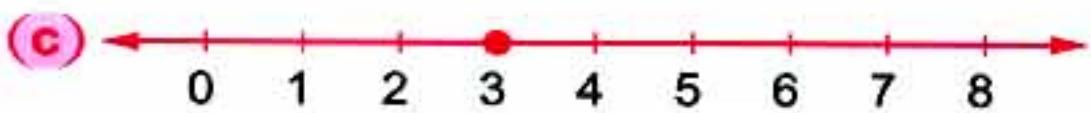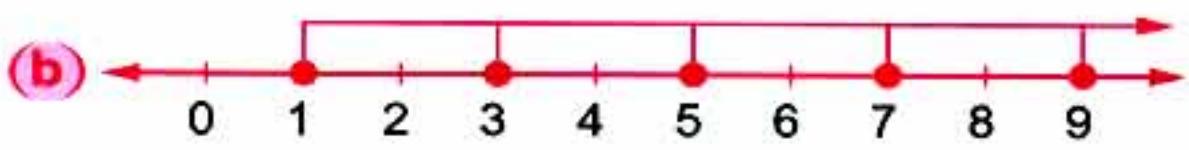
4

2 Represent on the number line each of the following sets :

(a) $\{1 , 3 , 6\}$

(b) $\{2\}$

(c) $\{5 , 6 , 7 , ... \}$

(d) $\{1 , 2 , 4\} \cup \{1 , 3 , 5\}$

5

3 List each of the following sets and represent them on the number line :

(a) The set of natural numbers less than 5

(b) The set of natural numbers greater than or equal 4

(c) The set of natural numbers between 2 and 7

(d) The set of even numbers less than $8\frac{1}{2}$

6

4 Complete :

(a) The smallest natural number is ⋯⋯⋯

(b) The smallest counting number is ⋯⋯⋯

(c) The set of natural numbers that are less than 7 is ⋯⋯⋯

(d) $C \cup \{0\}$ = ⋯⋯⋯

(e) $E \cap O$ = ⋯⋯⋯

5

5 Complete by using the suitable symbol "$\in , \notin , \subset$ or $\not\subset$" :

(a) $\{3\}$ ⋯⋯⋯ $\mathbb{N}$

(b) $\{2 , 5\} \cap \{2 , 4\}$ ⋯⋯⋯ O

(c) O ⋯⋯⋯ C

(d) 8.8 ⋯⋯⋯ $\mathbb{N}$

(e) 0 ⋯⋯⋯ C

5

7

Sheet 3

From lesson **1** unit **1**
to lesson **3** unit **1**

Total mark **25**

1 Use the number line to find each of the following :

(a) 4 + 3

(b) 7 − 5

(c) 3 + 3

(d) 6 − 6

(e) 5 + 4 − 3

[5]

2 Complete the following :

(a) The additive neutral element in $\mathbb{N}$ is ....

(b) 4 + (2 + 5) = (4 + 2) + 5 (............ property)

(c) a + b = b + a (............ property)

(d) If a ∈ $\mathbb{N}$, b ∈ $\mathbb{N}$, then a + b .... $\mathbb{N}$

(e) 14 + ... = ... + 14 = 14

[6]

3 Put (✓) or (✗) :

(a) The subtraction operation is an associative in $\mathbb{N}$ ( )

(b) 10 − 10 < 1 + 1 ( )

(c) 12.12 ∈ $\mathbb{N}$ ( )

(d) The smallest natural number is 1 ( )

(e) The natural number between $2\frac{1}{2}$ and 3.9 is 3 ( )

[5]

4 Use the properties of addition to find the value of :

(a) 46 + 17 + 64

(b) 71 + 82 + 29 + 18

(c) 174 + 143 + 126 + 157

[6]

5 The following number line shows 3 numbers " X , Y and Z" :

Complete using "> or <" :

(a) X .... Z

(b) X .... Y

(c) Z .... Y

[3]

8

Sheet 1

On lesson **1** unit **3**

Total mark
25

1 *Find the area of each of the following triangles :*

(a)

9 cm.

8 cm.

6

(b)

9 cm.

14 cm.

(c)

9.2 cm.

17.5 cm.
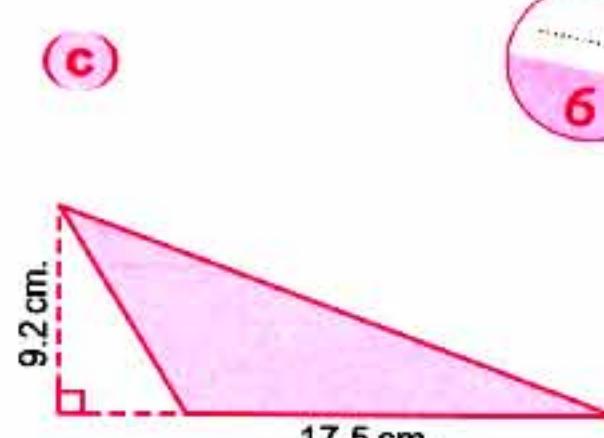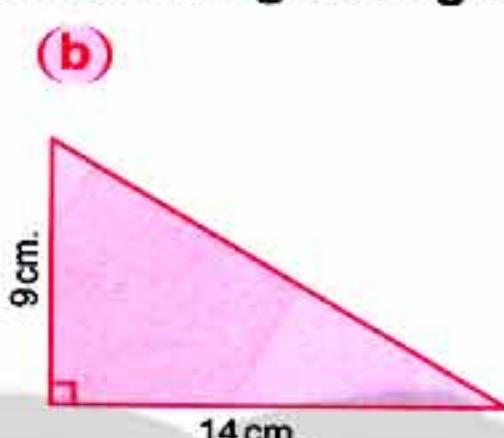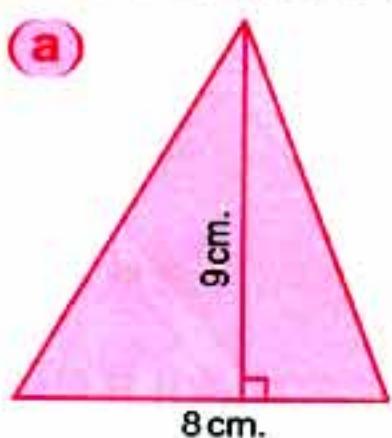
2 **(a)** *In the figure below :*
What is the area of this quadrilateral ?

20 cm.

24 cm.

8 cm.

12 cm.

4
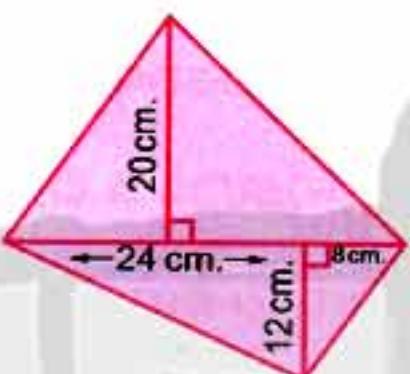
(b) *In the figure below :* If the area of the shaded triangle is 24 cm². Calculate its perimeter.

8 cm.

10 cm.
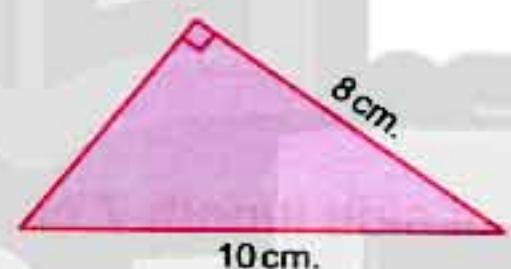
3 **(a)** Calculate the area of an equilateral triangle if its perimeter is 30 cm. and its height is 8.66 cm.

6

(b) *Which is larger in area ?* A piece of land in the shape of a triangle with a base of 12 m. and a height of 9 m. or a garden in the shape of a square with side length 8 m. ?

4 **In the opposite figure :**

ABC is a right-angled triangle at A ,

AB = 6 cm. , AC = 8 cm. , BC = 10 cm.

$\overline{AD} \perp \overline{BC}$, find :

4

A
8 cm.
6 cm.
C
D
B
10 cm.

(1) Area of △ ABC
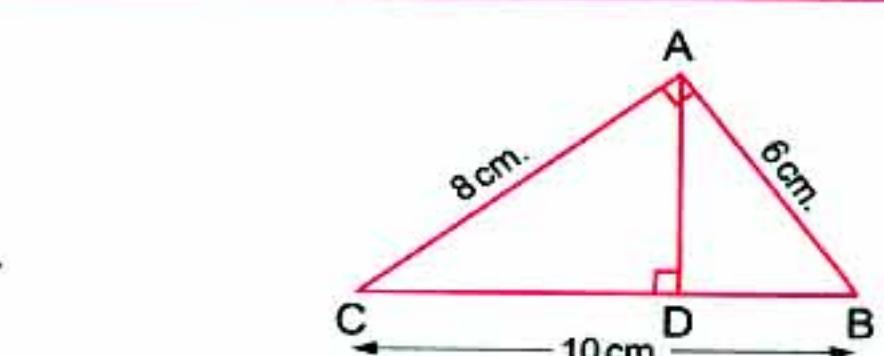
(2) Length of $\overline{AD}$

5 **In the opposite figure :**

ABCD is a square , its perimeter is 60 cm.

, E ∈ $\overrightarrow{BC}$, BE = 35 cm.

Find the area of the figure ABED

5

D
A
E
C
B
35 cm.
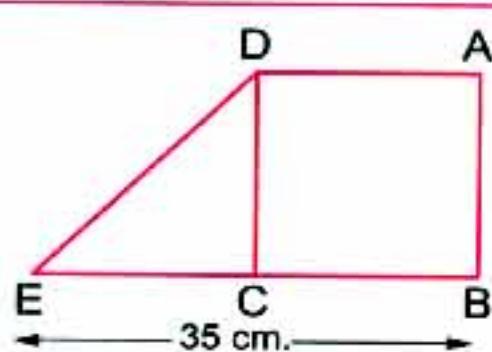
15

Sheet 2

From lesson **1** unit **3**
to lesson **2** unit **3**

Total mark
25

---

1 *Find the area of each of the following parallelograms :*   **6**

(a)
5 cm. | 4 cm.
10 cm.

(b)
15 cm. | 17 cm.
12 cm.

(c)
4 cm.
6 cm.
5 cm.

---
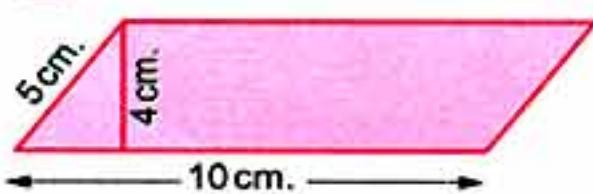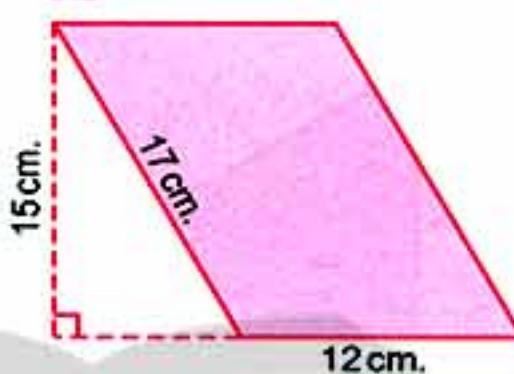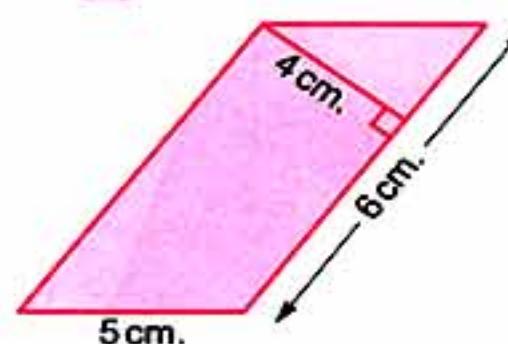
2 **(a)** Find the height of parallelogram with area 28 cm^2 and base 4 cm.   **4**

(b) ABCD is a parallelogram of area 180 cm^2 , AB = 60 cm. , CD = 45 cm. Find its smallest height.

---

3 *Which is greater ?*   **3**

The area of the square of side length 7 cm. or the area of the parallelogram of base 9 cm. and height 5 cm.

---

4 **(a)** Find the area of the triangle whose base length is 10 cm. and the corresponding height is 9 cm.   **6**

(b) *In the opposite figure :*

ABCD is a parallelogram in which

AD = 15 cm. , CD = 10 cm. , DF = 8 cm.

and $\overline{DE} \perp \overline{AB}$, calculate the length of $\overline{DE}$

D | 15 cm. | A
10 cm. | 8 cm.
C | F | B | E

---
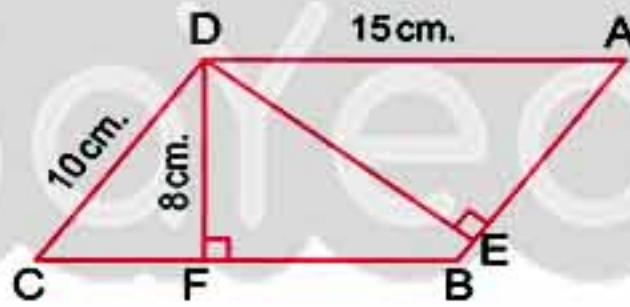
5 *In the opposite figure :*   **6**

ABCD is a parallelogram in which BC = 14 cm. ,

BE = 6 cm. , M is the midpoint of $\overline{AD}$

D | M E | A
C | 14 cm. | B

Complete :

(1) AD = ... cm.   **(2)** AM = ... cm.

(3) The area of ⟋⟍ ABCD = ... cm^2

(4) The area of △ ABM = ... cm^2

(5) The area of figure MBCD = ... cm^2

16
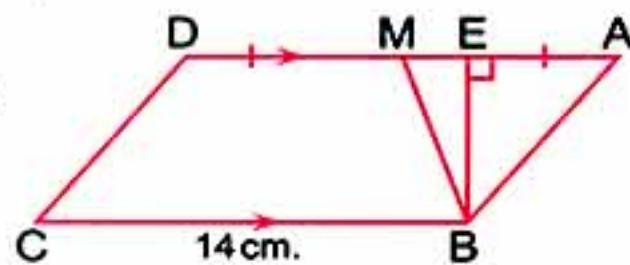
EXERCISE 1 — Set of Natural Numbers (ℕ)

1 Circle each natural number:

6 , $\frac{3}{4}$, 1 , zero , 0.4 , 127 , 5.9 , 5678 and $\frac{8}{2}$

2 Complete by using the suitable symbol from $(\in , \notin , \subset , \not\subset)$:

a) 📖 2 ☐ ℕ

b) 📖 {2} ☐ ℕ

c) 📖 {55} ☐ ℕ

d) 📖 0.7 ☐ ℕ

e) 📖 {1, 3} ∩ {2, 4} ☐ ℕ

f) 📖 Zero ☐ ℕ

g) 📖 22.22 ☐ ℕ

h) 📖 {2 , 0.2} ☐ ℕ

3 In each of the following, choose the correct answer from the given ones:

① ℕ ∩ ℂ = ...
a) ℂ
b) ℕ
c) {0}
d) {3}

② ℂ − {0} = ...
a) ℂ
b) ℕ
c) {0}
d) {1, 2}

③ ℕ ∩ {0} = ...
a) ℂ
b) ℕ
c) {0}
d) {5}

④ ℕ ∪ ℂ = ...
a) ℂ
b) ℕ
c) {0}
d) {1, 2, 3}

⑤ ℂ ∩ {0} = ...
a) {0}
b) ℕ
c) ℂ
d) ∅

⑥ ℕ − {0} = ...
a) {0}
b) ℕ
c) ℂ
d) ∅

4 📖 Put (✓) or (✗):

a) $7.2 \in ℕ$ ( )

b) $\{0\} \subset ℕ$ ( )

c) $\{0\} \cup \{1, 2, 3\} = ℕ$ ( )

d) The greatest natural number is milliard. ( )

e) The set of natural numbers is infinite. ( )

14

f) The weight of an object in kilograms $\in \mathbb{N}$. ( )

g) The number of pages of a book $\in \mathbb{N}$. ( )

h) $\{0\} \not\subset \mathbb{N}$ ( )

i) $\{0, 1, 2\} \cap \{0, 5, 10\} = \varnothing$ ( )

---

5 **Complete the following:**

a) 📚 📖 The smallest counting number is ....

b) 📚 📖 The smallest natural number is ....

c) The set of natural numbers greater than 27 by listing method is ....

d) 📚 📖 The set of natural numbers less than 5 is ....

e) The set of natural numbers that is included between 4 and 12 is ....

f) The set of multiples of 3 less than 27 is ....

g) $\{\text{milliard}\} \cup \mathbb{N} =$ ....

h) $\varnothing \cap \mathbb{C} =$ ....

---

6 📖 *Write down two sets, one of them is a subset of $\mathbb{N}$ and the other one is not a subset of $\mathbb{N}$.*

....

....

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7 **Complete by using ($\in$ or $\notin$) :**

a) $(27.6 + 9.4)$ ☐ $\mathbb{C}$

b) $(35 \div 0.625)$ ☐ $\mathbb{N}$

c) $(178.4 \times 2.5 - 46)$ ☐ $\mathbb{N}$

d) $(27.85 - \frac{557}{20})$ ☐ $\mathbb{C}$

| multiples	مضاعفات	milliard	مليار

EXERCISE 2

Some Subsets of Natural Numbers

1 *Mark (✓) for the correct statement and (X) for the incorrect one:*

a) The set of even numbers $\subset \mathbb{N}$. ( )

b) The set of odd numbers $\subset \mathbb{N}$. ( )

c) The weight of an object in kg $\in \mathbb{N}$. ( )

d) Your phone numbers $\in \mathbb{N}$. ( )

e) The number of pages of this book $\in \mathbb{N}$. ( )

f) The smallest prime number is 1. ( )

g) The set of prime numbers $\not\subset \mathbb{N}$. ( )

h) $2 \in$ the set of prime numbers. ( )

2 *Using the following Venn diagram, complete:*

a) 📖 $X \cap Y =$ ....

b) 📖 $Y \cap Z =$ ....

c) 📖 $X \cup Y =$ ....

d) 📖 $(X \cup Y) \cup Z =$ ....

e) 📖 $(X \cap Y) \cap Z =$ ....

f) $X - Y =$ ....
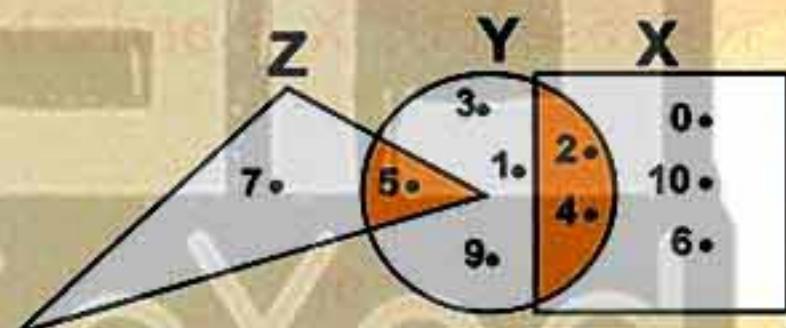
3 *If* $\mathbb{N} = \{0, 1, 2, 3, ...\}$, $\mathbb{O} = \{1, 3, 5, ...\}$, $\mathbb{E} = \{0, 2, 4, ...\}$, $\mathbb{P} = \{2, 3, 5, 7, ...\}$ *and* $\mathbb{C} = \{1, 2, 3, 4, ...\}$, *then complete each of the following:*

a) 📖 $\mathbb{E} \cap \mathbb{P} =$ ....

b) 📖 $\mathbb{C} \cap \mathbb{N} =$ ....

c) 📖 $\mathbb{E} \cap \mathbb{O} =$ ....

d) 📖 $\mathbb{E} \cup \mathbb{O} =$ ....

e) 📖 $\mathbb{N} \cup \mathbb{O} =$ ....

f) 📖 $\{15, 6, 0, 4\} \cap \mathbb{N} =$ ....

g) $\{2\} \cap \mathbb{P} =$ ....

h) $\{0\} - \mathbb{N} =$ ....

(20)

4 *If* $U = \{x : x \in \mathbb{N}, 5 \leqslant x < 15\}$, $X = \{5, 7, 11, 13\}$, $Y = \{7, 8, 9, 10, 11\}$ *and*

$Z = \{8, 9, 10, 11\}$,

a) Find by listing method each of: $X - Y$, $Z - X$, $X \cap Y$, $Y \cap Z$

b) Find by listing method each of: $X \cup Y$, $Y \cup Z$

c) Find: $X`$, $Y`$, $Z`$, and represent them on the number line.

5 *If Y is the set of the factors of number 60, find:*

a) Y b) $Y \cap \mathbb{E}$

c) $Y \cap \mathbb{O}$ d) $Y \cap \mathbb{N}$

e) $Y \cup \mathbb{N}$ f) $Y \cap \mathbb{P}$

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6 *If* $U = \mathbb{N}$ *and X is the set of multiples of 3 less than 15, then complete*
each of the following:

a) $\mathbb{E}`$  b) $\mathbb{O}`$

c) $\mathbb{C}`$  d) $\mathbb{N} - X`$

NOW

Gem
**in MATH & Science**
for Primary Stage
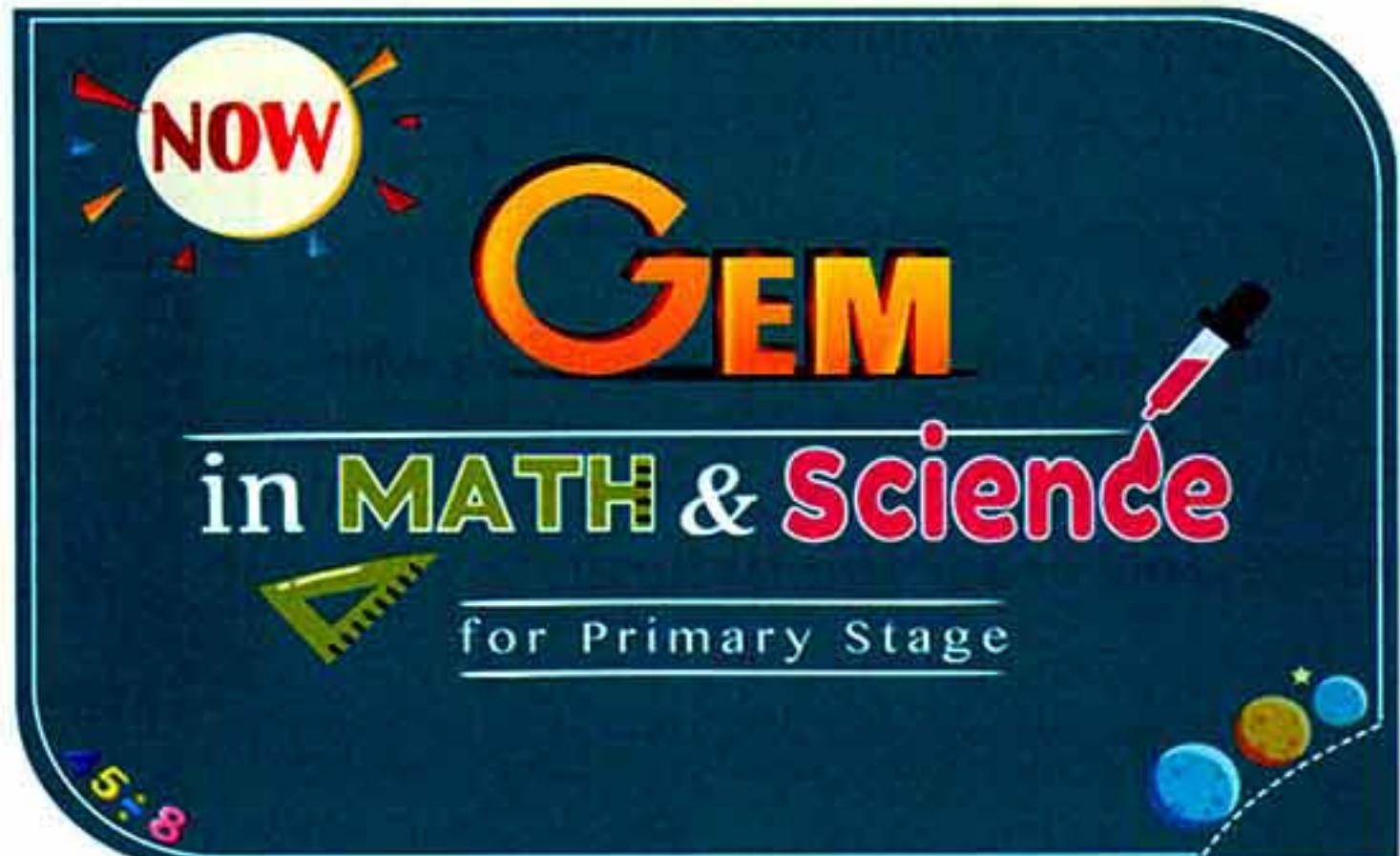
EXERCISE 3

Ordering and Comparing of Natural Numbers

Interactive Exercise

1 📖 **Write by listing method the set of numbers represented in each case:**

a) {...............}

b) {...............}

c) {...............}
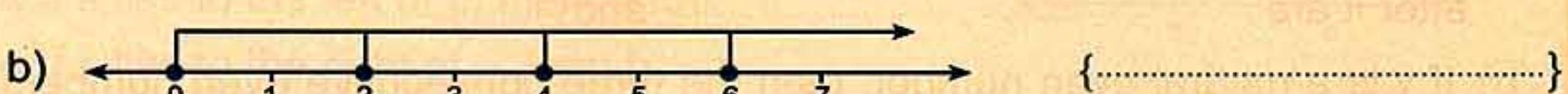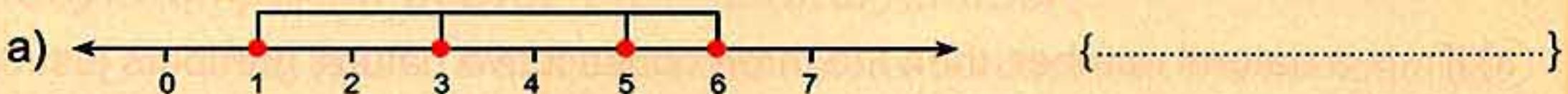
2 **Arrange each of the following numbers ascedningly, then represent them on the number line:**

a) 4, 0, 2, 5, 9 and 7.

The order is ....
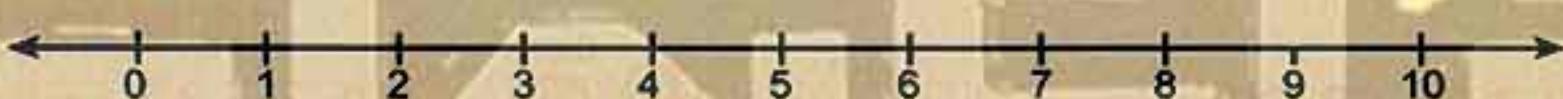
b) 5, 0, 3, 4 and 9.

The order is ....
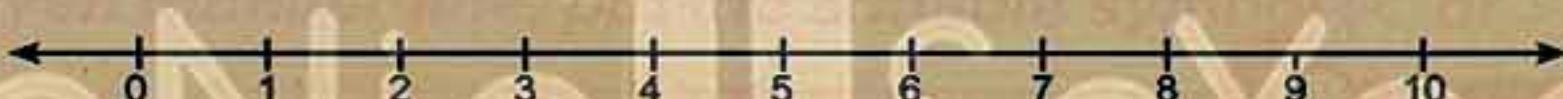
c) 7, 8, 6, 4 and 0.

The order is ....

3 📖 **Represent the set X ∪ Y on the number line:**

where X = {1 , 2 , 4 , 5} and Y = {5 , 6 , 7}, then find: X ∩ Y.

....

....

4 *Represent each of the following sets on the number line:*

a) X = { 0 , 2 , 4 , 6 , 8}   b) Y = { 1 , 3 , 5 , 7 , 9}.

c) { 0 , 2 , 6} ∩ { 2 , 5 , 6}.   d) { 6 , 7} ∪ { 6 , 8 , 9 , 10}.

e) { 3 , 5 , 7 , 9} − { 3 , 7 , 8}.

5 📖 *If a, b, c, d and e are natural numbers, and they are represented on the number line as shown on the figure below:*

$$\xleftarrow{\qquad\underset{a}{|}\quad\underset{b}{|}\quad\underset{c}{|}\quad\underset{d}{|}\quad\underset{e}{|}\qquad}\rightarrow$$
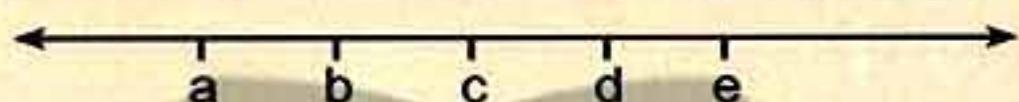
First: Complete using (< or >), giving the reason:

a) a ☐ b   because ....   b) b ☐ e   because ....

c) c ☐ e   because ....   d) e ☐ b   because ....

e) a ☐ d   because ....   f) d ☐ c   because ....

Second: Arrange the represented letters ascendingly:

The ascending order is .... , ... , ... , ... and ....

6 *Write the following by listing method, then represent them on the number line:*

a) 📖 The set of natural numbers greater than 5.

b) 📖 The set of natural numbers less than 7.

c) 🔺 The set of prime numbers less than 14.

d) The set of factors of 12.

e) 📖 The set of prime factors of 30.

f) 📖 The set of odd numbers.

g) 📖 The set of even numbers.

h) 📖 The set of natural numbers between 1 and 4.

i) The set of natural numbers between 2.35 and 9.7.

7 **Write [> , < or =]:**

a) 908 ☐ 9008

b) 5075 ☐ 5057

c) 2239 ☐ 2229

d) $x + 18$ ☐ $x + 17$, where $x \in \mathbb{N}$

e) $x - 18$ ☐ $x - 17$, where x is a natural number greater than 20.

f) If $x \in \{30 , 21 , 32 , 33\}$, then x ☐ 75

g) If $y \in \{20 , 21 , 22 , 23 , 24\}$, then y ☐ 18

h) If $z \in \{35\}$, then z ☐ 35

8 **Write the following by listing method, then represent them on the number line:**

a) $X = \{a : a \in \mathbb{N}, a < 5\}$

b) $Y = \{a : a \in \mathbb{N}, a \leqslant 1\}$.

c) $Z = \{a : a \in \mathbb{N}, a < 9\}$.

d) $L = \{a : a \in \mathbb{N}, a \geqslant 3\}$.

e) $M = \{a : a \in \mathbb{N}, 2 \leqslant a < 5\}$.

f) $F = \{a : a \in \mathbb{N}, 8 < a \leqslant 10\}$.

g) $T = \{a : a \in \mathbb{N}, 0 < a < 4\}$.

h) $A = \{a : a \in \mathbb{N}, 3 \leqslant a < 7\}$.

9 **Rewrite the following statements using (> , $\geqslant$, < or $\leqslant$):**

a) x is less than 7 and greater than or equal to 1.

b) y lies between 11 and 17.

c) 10 is greater than or equal to Z.

d) Z lies between 14 and 7.

10 **Complete each of the following:**

a) The least odd number is ....

b) The least prime number is ....

c) The smallest 2-digit natural number is ....

d) The greatest 3-digit natural number is ....

28

e) The least even number between 24 and 33 is ....

f) 📖 Four consecutive natural numbers, the greatest of them is $x + 7$, are

.... , ... , ... , ... ($x \in \mathbb{N}$).

g) 📖 Five consecutive natural odd numbers, the greatest of them is y + 15, are

.... , ... , ... , ... , ... ($y \in \mathbb{N}$).

h) 📖 If the middle number of three consecutive natural odd numbers is y, then

the other two numbers are .... , ... and the least value of y is

....

---

11 *Given: $U = \{x : x \in \mathbb{N}, 3 < x \leqslant 11\}$, $X = \{4, 5, 9\}$ and*

$Y = \{y : y \in \mathbb{N}, 5 \leqslant y \leqslant 11\}$, then find each of the following and

represent the result on the number line.

a) X - Y
b) $X` \cup Y$
c) $X` \cap Y`$

🏆 **FOR EXCELLENT PUPILS**

12 1) 📖 *If a, b, c and d are four natural numbers where:*

$d > a$, $b < c$, $c < d$, $b < d$ and $b > a$,

then arrange these numbers on the number line.

2) If x , y , z , ℓ and m are five natural numbers where:

$\ell < x < m$, $x < m < z$, $y < \ell$.

Represent these numbers on the number line.

EXERCISE 1 — Area and its Units (area of triangle)

Interactive Exercise

1 📖 *Determine the base and corresponding height in each triangle as the examples:*

Ex.
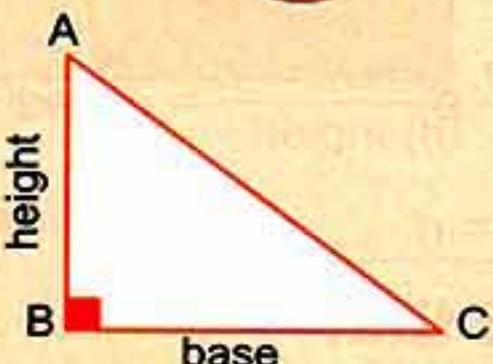
The base is $\overline{BC}$
The height is $\overline{AB}$

Ex.
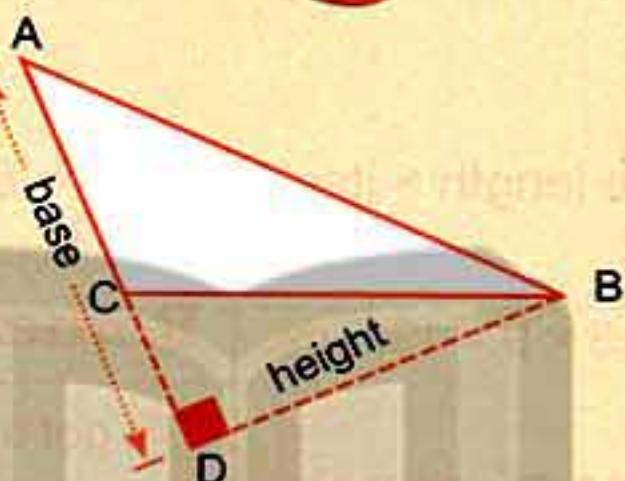
The base is $\overline{AC}$
The height is $\overline{BD}$

Ex.
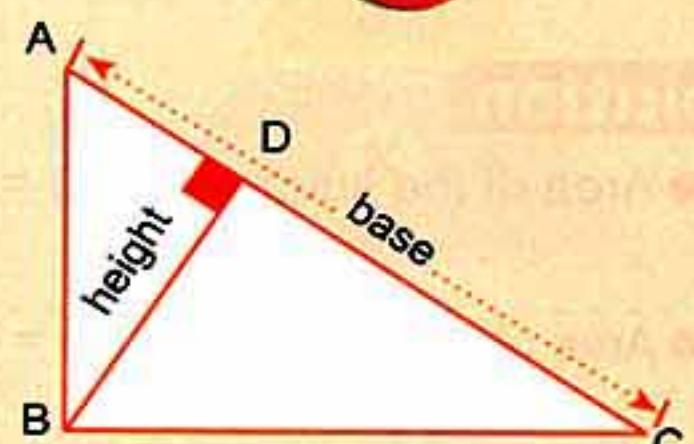
The base is $\overline{AC}$
The height is $\overline{BD}$

a)
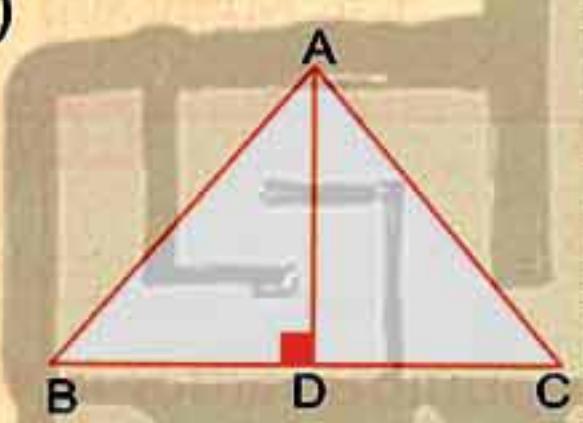
The base is ....
The height is ....

b)
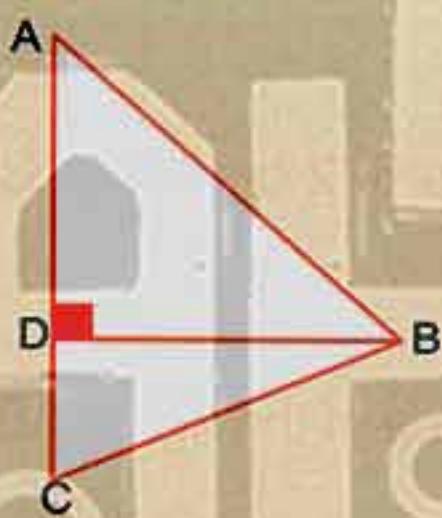
The base is ....
The height is ....

c)
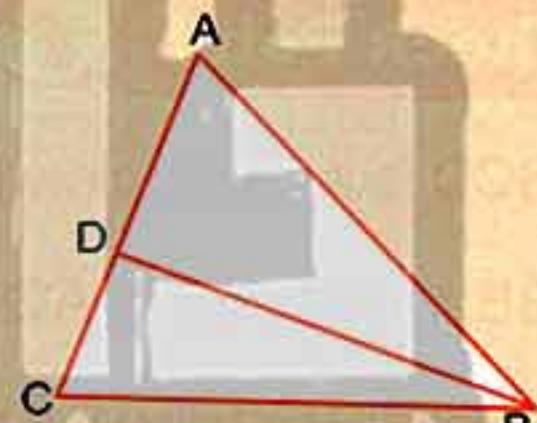
The base is ....
The height is ....

d)
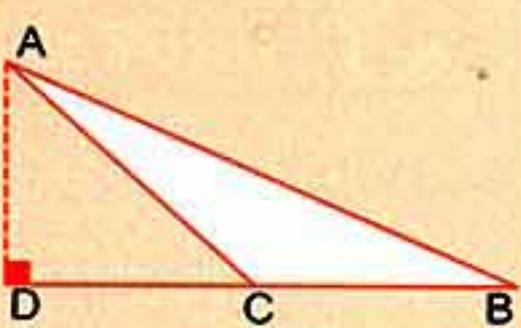
The base is ....
The height is ....

e)
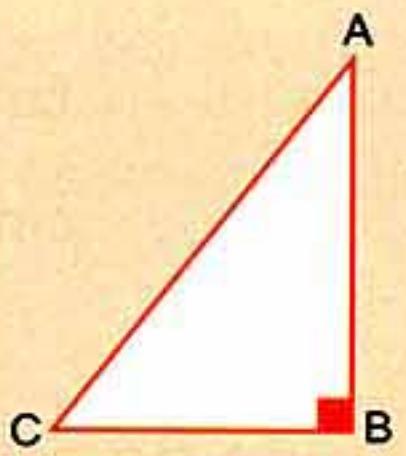
The base is ....
The height is ....

f)
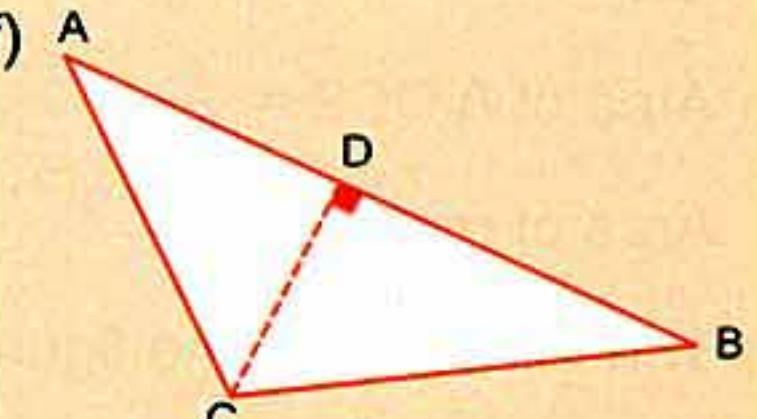
The base is ....
The height is ....
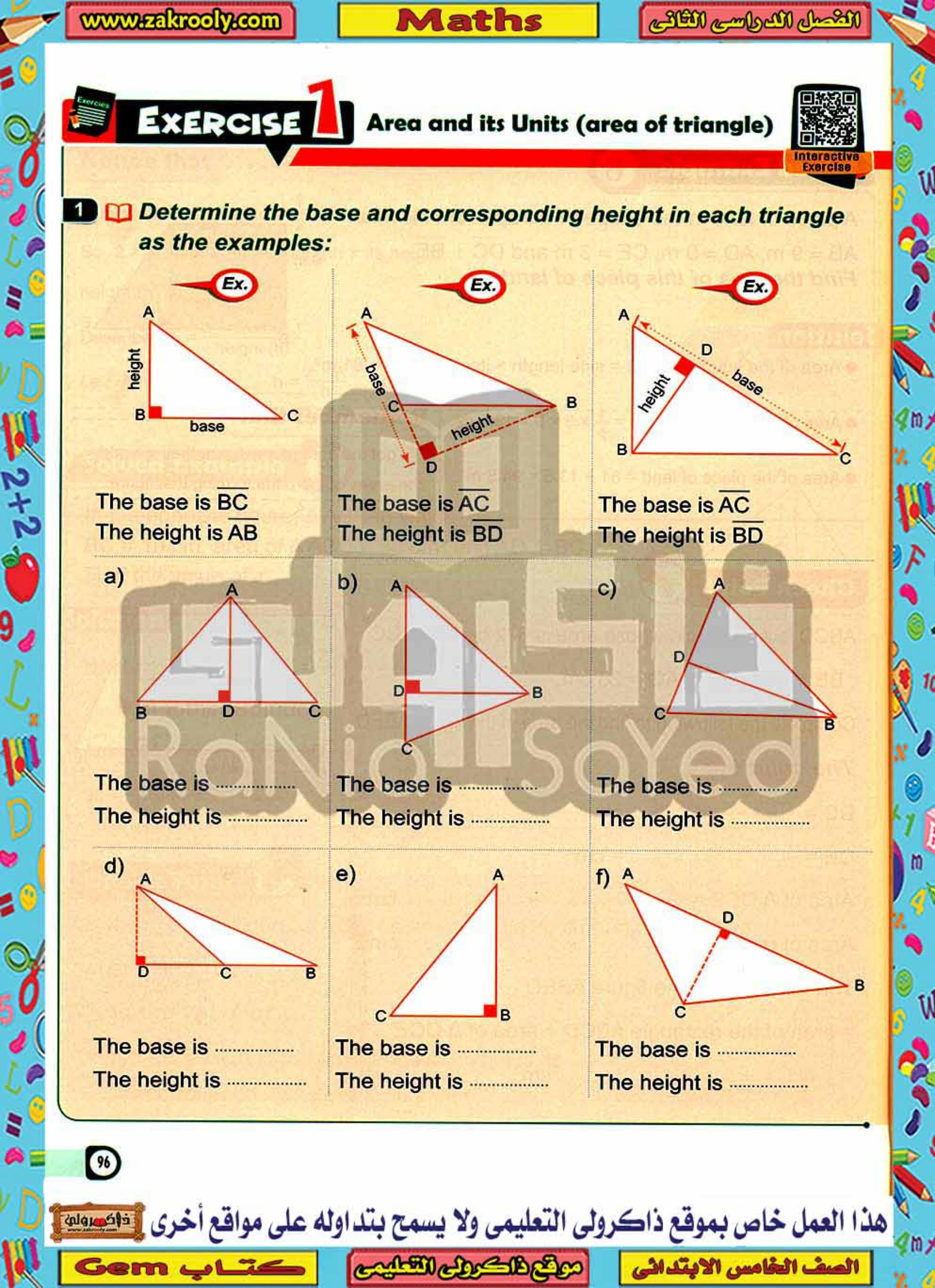
2 **Find the area of the triangle ABC in each of the following:**
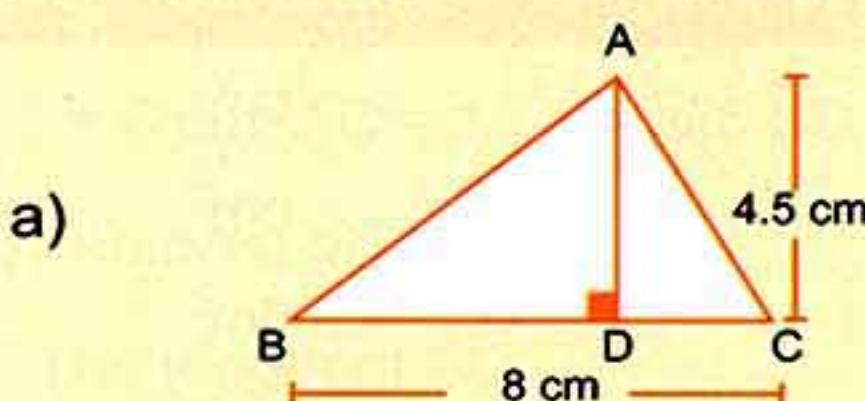
a)

4.5 cm

8 cm

Area of △ ABC = ... × ..... × .....

= .... cm².

b)

5 cm

7 cm

Area of △ ABC = ... × ..... × ....

= .... cm².

c)

3.8 cm

4.2 cm

Area of △ ABC = ... × ..... × .....

= .... cm².

d)

5 cm

9 cm

7.5 cm

8 cm

Area of △ ABC = ... × ..... × .....

= .... cm².

e)

2 cm

48 mm

Area of △ ABC = ... × ..... × .....

= .... cm².

f)

6.5 cm

3.2 cm

2 cm

Area of △ ABC = ... × ..... × .....

= .... cm².

(97)
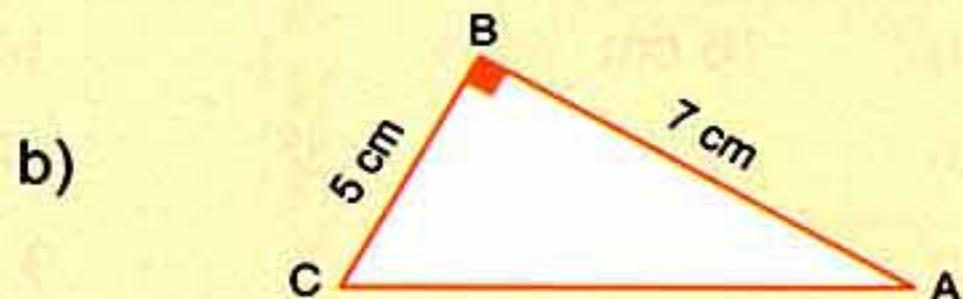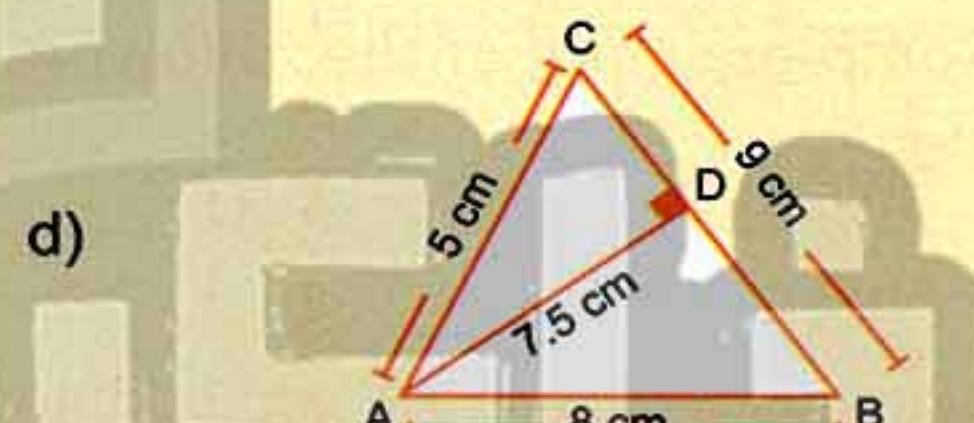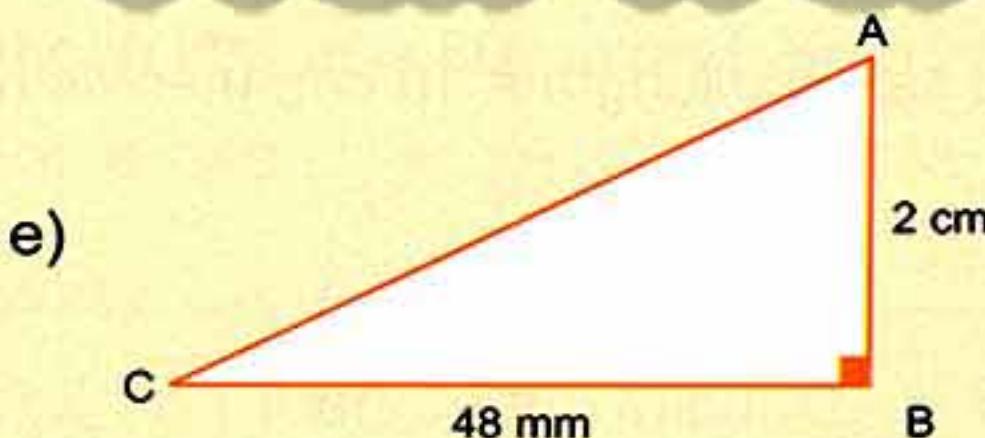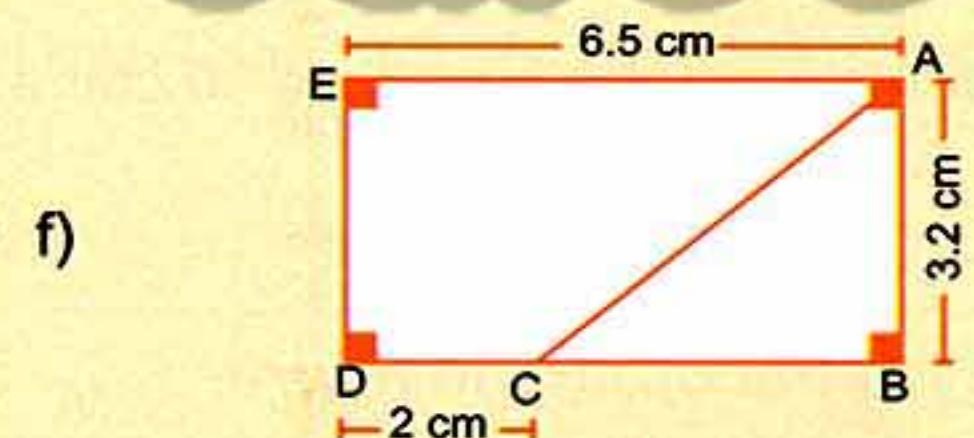
3 **Complete the following table:**

	The base length	The corresponding height	The area of triangle
a)	16 cm	14 cm	.... cm²
b)	7 cm	12 cm	.... cm²
c)	12 dm	9 dm	.... dm²
d)	10 dm	.... dm	25 dm²
e)	8 dm	.... dm	32 dm²
f)	...... cm	12.5 cm	62.5 cm²
g)	9 m	.... m	45 m²

4 **Complete each of the following:**

a) Area of a triangle $= \dfrac{1}{12} \times \text{............} \times \text{............}$

b) Area of a square $= \text{............} \times \text{............}$

c) Area of a rectangle $= \text{............} \times \text{............}$

d) 📕 A triangle whose base length = 12 cm and corresponding height = 5 cm,
then its area = ... cm².

e) A triangle whose base length = 10 cm and area = 25 cm², then its height

= .... cm.

f) If the area of a triangle is 30 cm² and its base length = 10 cm, then its height

= .... cm.

5 📖 *In the opposite figure:*

If AD = 9 cm and BC = 20 cm, find:

a) The area of △ ABC.

b) The length of $\overline{BE}$, if AC = 18 cm.

(98)
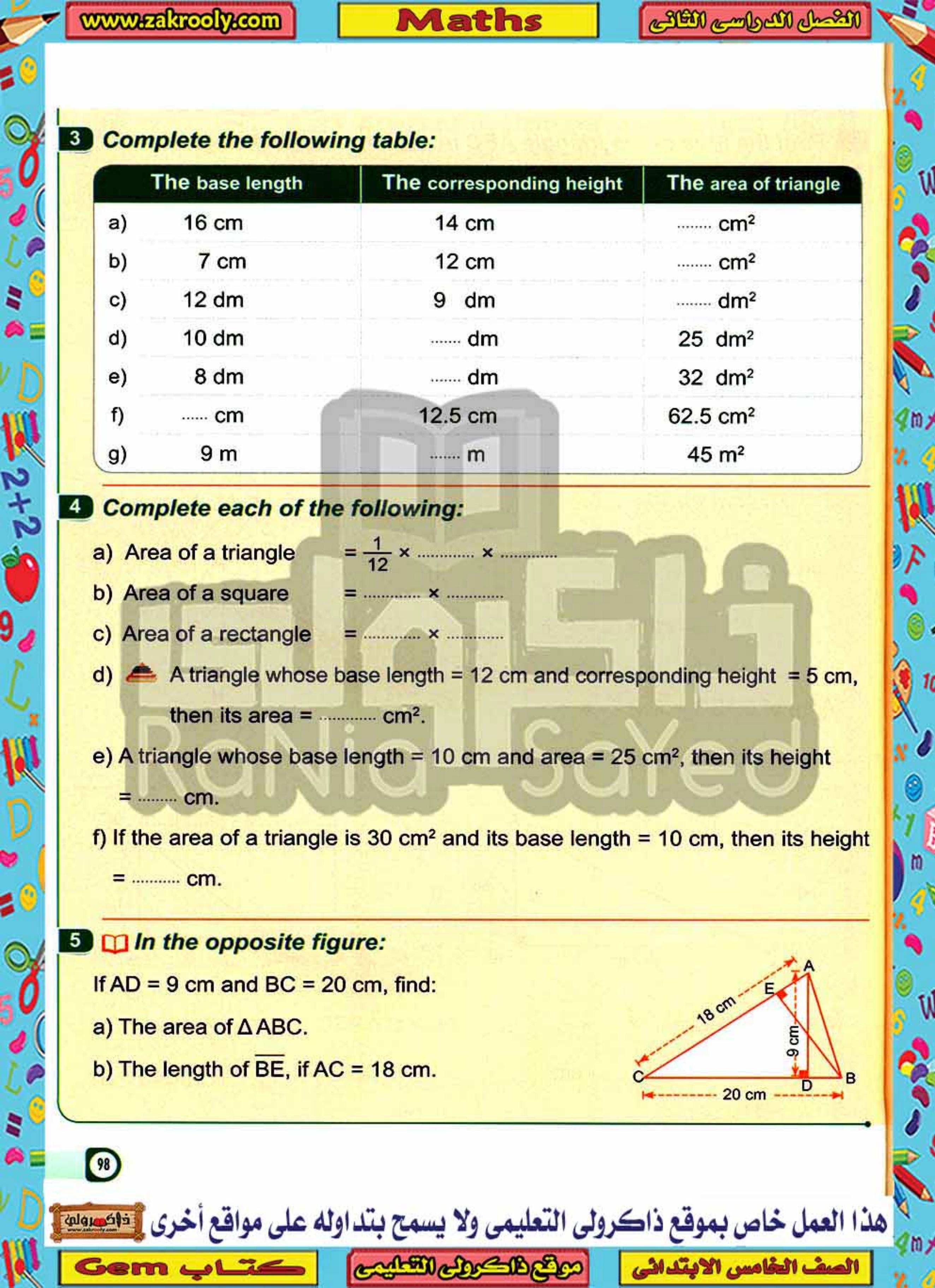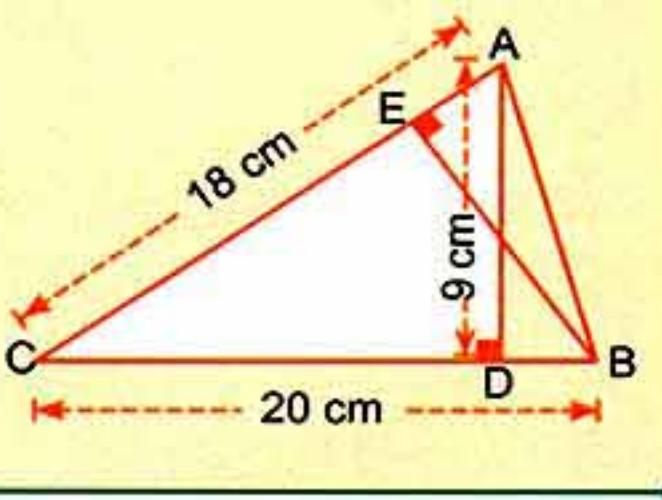
6 *In the opposite figure:*

ABC is a right-angled triangle at B. If AB = 6 cm,

BC = 8 cm, AC = 10 cm and $\overline{BD} \perp \overline{AC}$, find:

a) The area of △ ABC

b) The length of $\overline{BD}$
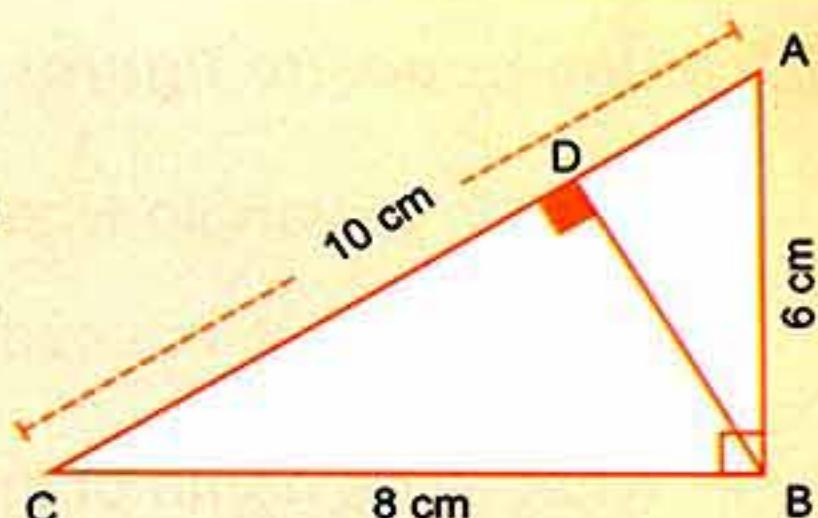
7 *In the opposite figure:*

ABCD is a rectangle whose area is 600 cm²,

$E \in \overrightarrow{BC}$, BE = 35 cm and AD = 25 cm. Find:

a) The area of △ DCE.

b) The area of the figure ABED.
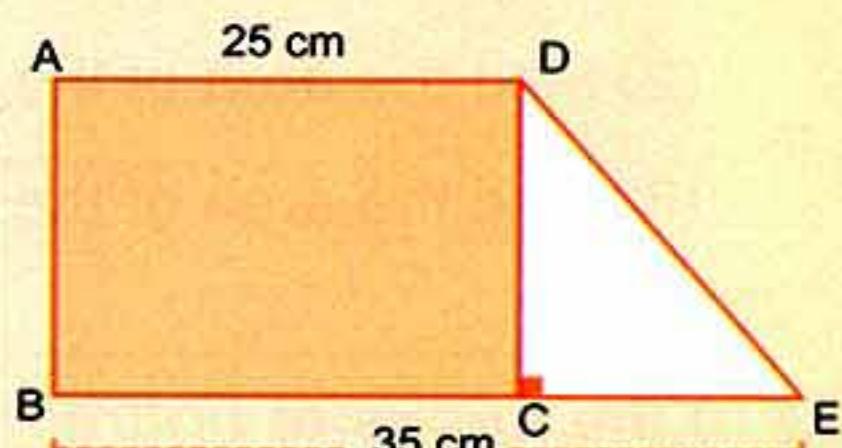
8 *Which is greater in area...?*

A triangle with base length 3.25 dm and height = 4 dm or a rectangle with

dimensions 26 cm and 20 cm.

Then find the difference between their areas in cm².

9 *Which is greater in area...?*

A triangle whose base length is 96 cm and height is 6 dm or a rectangle

whose length is 80 cm and width is 34 cm. Then find the difference between

their areas in square decimeter.

10 *In the opposite figure:*

XYZ is a triangle in which $\overline{XL} \perp \overline{YZ}$, M is

the midpoint of $\overline{XL}$.

If ZY = 12 cm and XL = 8 cm then, calculate

the area of the shaded figure.
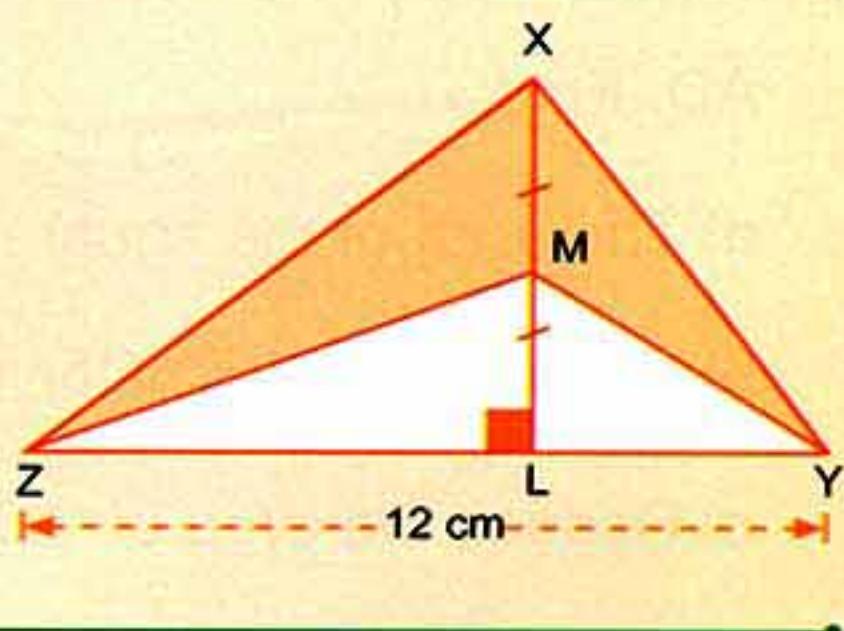
11 *In the opposite figure:*

ABCD is a rectangle whose area is 96 cm²,

if AB = 6 cm, E is the midpoint of $\overline{BC}$.

a) What is the name of the shaded part?

b) (1) Find the perimeter of the rectangle ABCD.

   (2) Find the area of the triangle ABE.

   (3) Find the area of the shaded part.

---
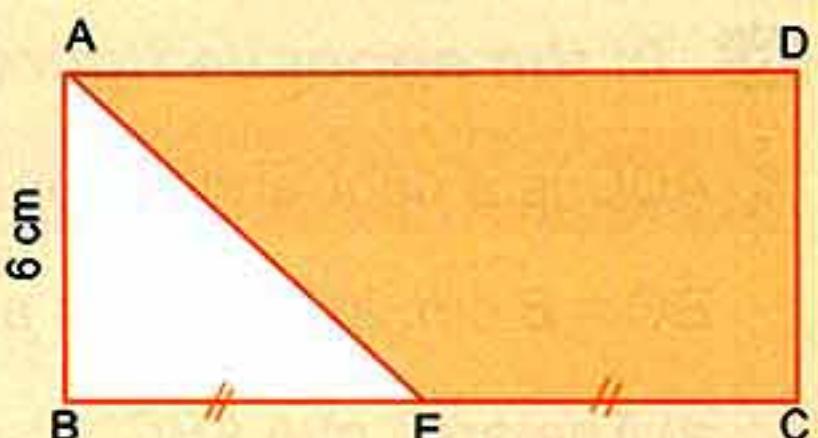
12 *In the opposite figure:*

ABCD is a rectangle in which AB = 8 cm,

BC = 16 cm

and E ∈ $\overline{BC}$ where AE = EC = 10 cm.

Find the area of the figure AECD.

---
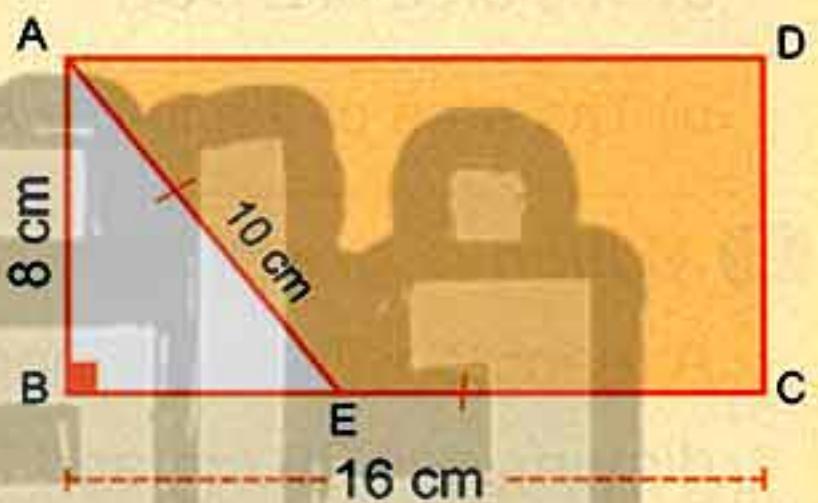
13 📖 *In the opposite figure:*

ABCD is a square whose side length = 8 cm,

X is the midpoint of $\overline{AB}$ and Y is the midpoint of

$\overline{AD}$. Find:

a) The area of the square ABCD

b) The area of each of the three shaded triangles.

c) Deduce the area of Δ XYC.
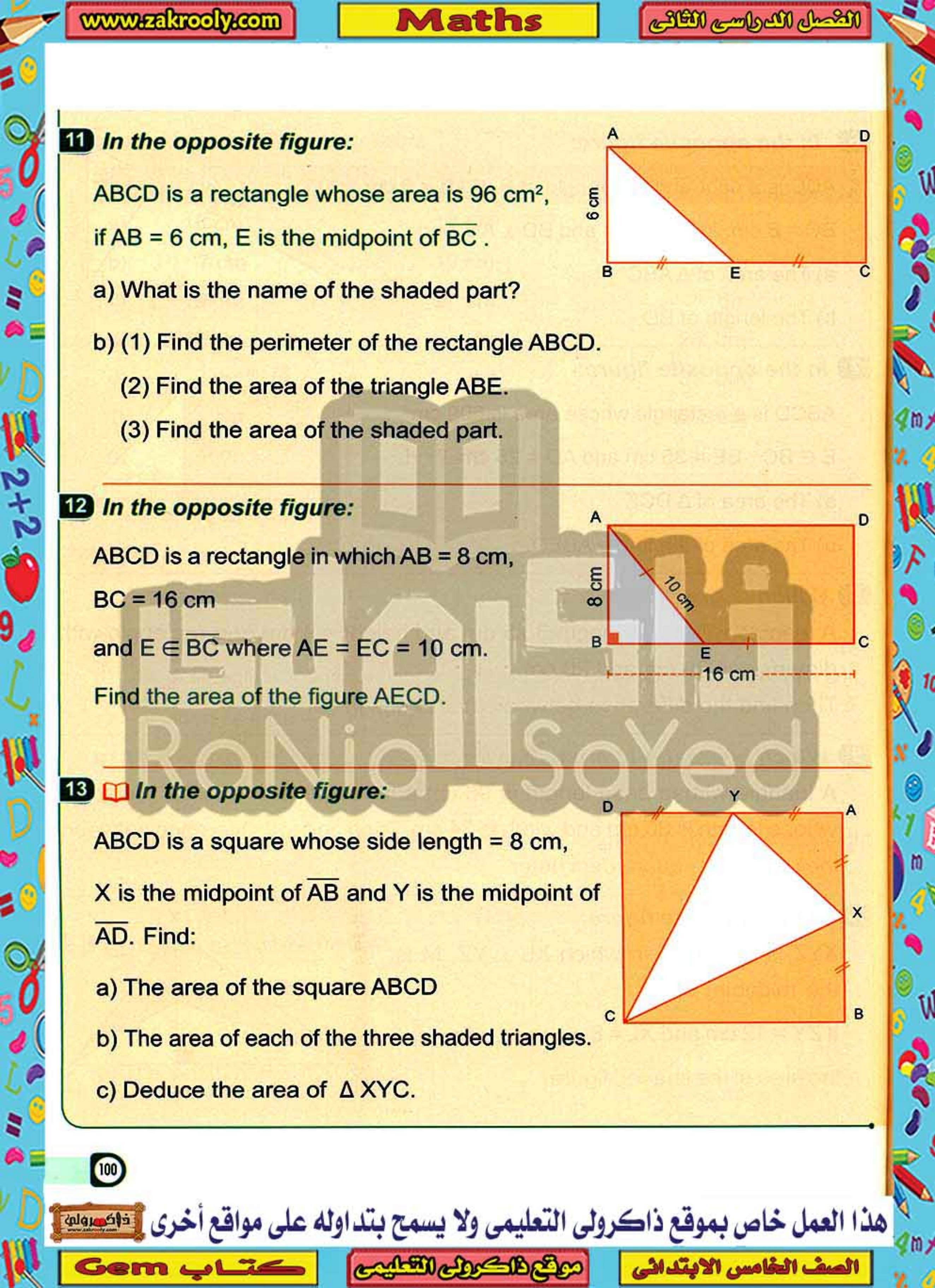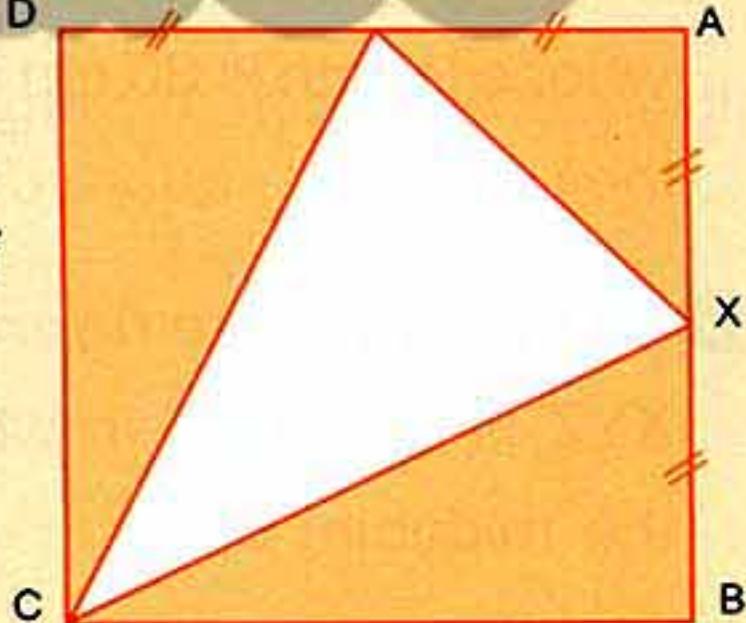
14 *In the opposite figure:*

ABCD is a rectangle

, AD = 30 cm , CD = 150 cm

and CE = 10 cm

Calculate the area of the shaded part.
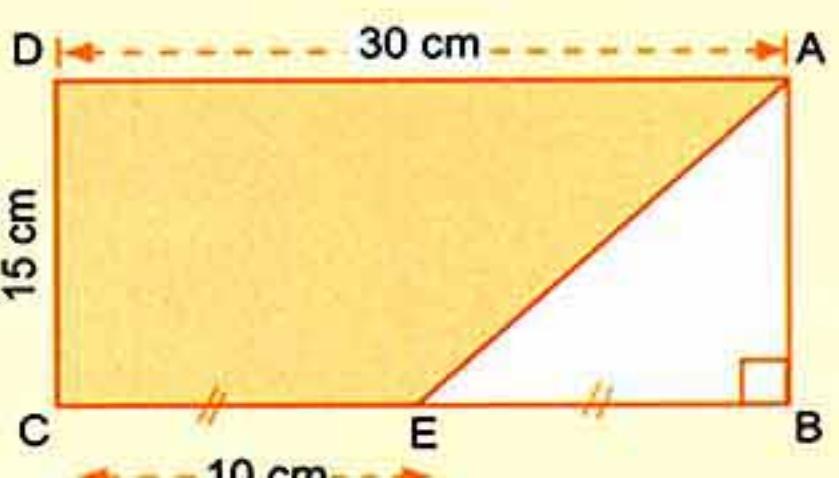
🏆 **FOR EXCELLENT PUPILS**

15 *ABCD is a parallelogram in which:*
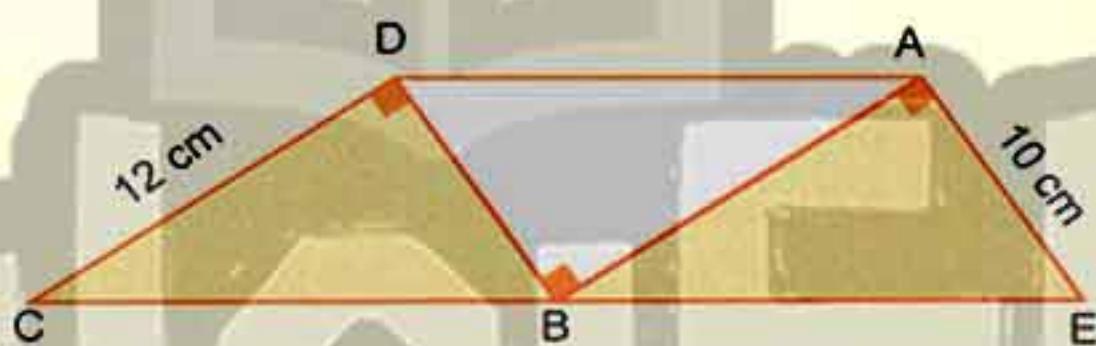
$\overline{BD} \perp \overline{BA}$ and $\overline{AE} \perp \overline{BA}$: if AE = 10 cm and

DC = 12 cm , then answer the following:

a) What are the names of figures AEBD and AECD?

b) Calculate the area of each of AEBD and AECD.
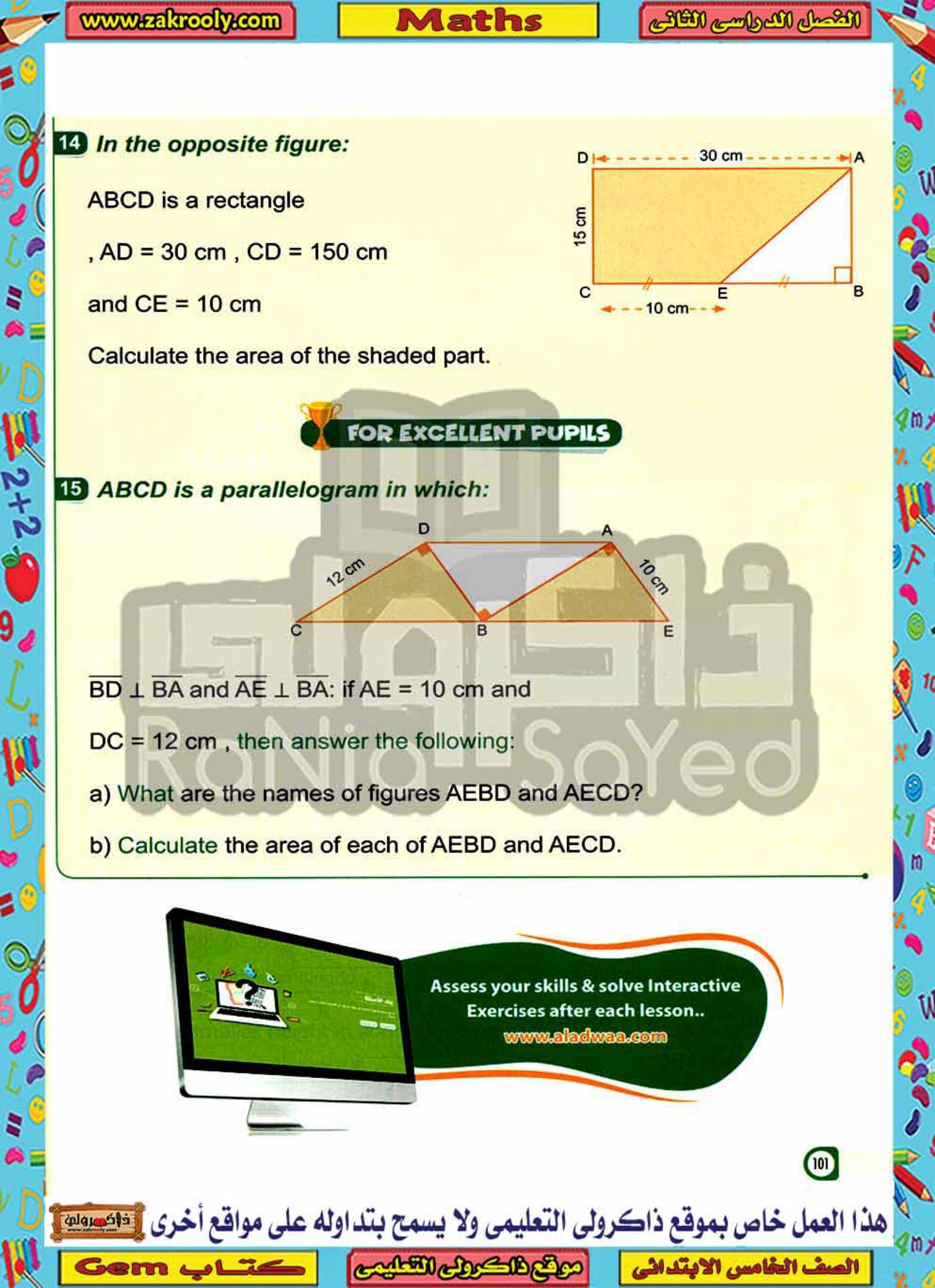
EXERCISE 2 — Surface Area of a Parallelogram

Interactive Exercise

1 📖 In each of the following parallelograms, determine the base and its corresponding height as the example:

Ex. The base is $\overline{BC}$, its corresponding height is AE
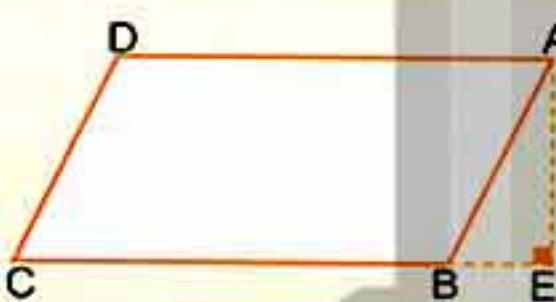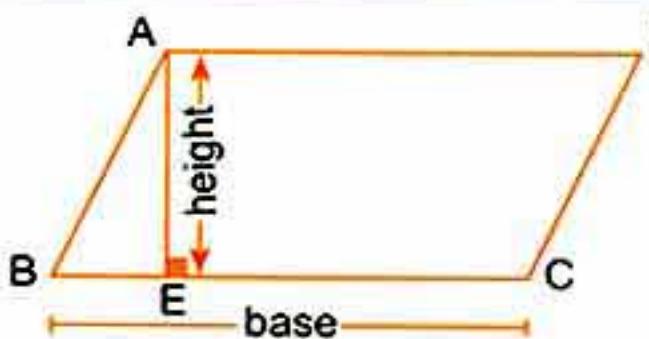
Figure (1)

The base is ....

Its corresponding height is ....
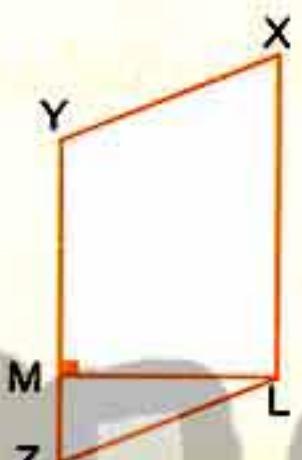
Figure (2)

The base is ....

Its corresponding height is ....
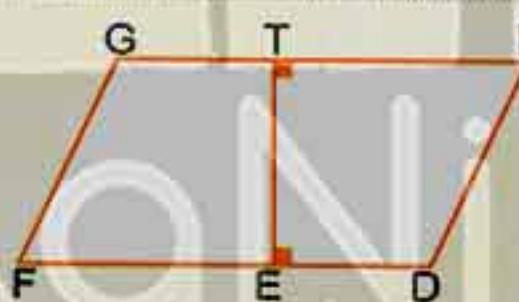
Figure (3)

The base is ....

Its corresponding height is ....

Figure (4)

The base is ....

Its corresponding height is ....
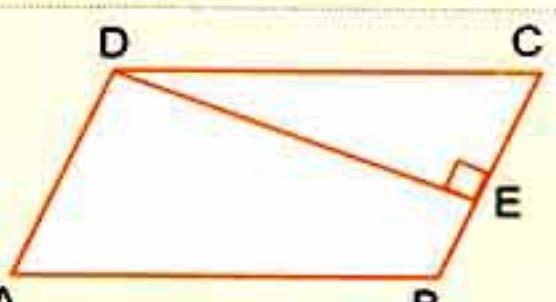
Figure (5)

The base is ....

Its corresponding height is ....
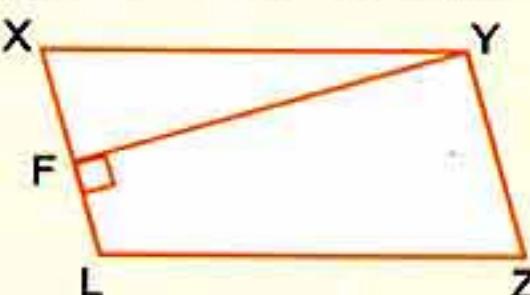
Figure (6)

The base is ....

Its corresponding height is ....

2 **Find the area of each parallelogram:**

a)

10 cm

16 cm

Area = ... × ...... = ... cm².

b)

6 cm

10.2 cm

Area = ... × ...... = ... cm².

c)

4 cm

3.4 cm

6.5 cm

Area = ... × ...... = ... cm².

d)

12.2 cm

10 cm

7 cm
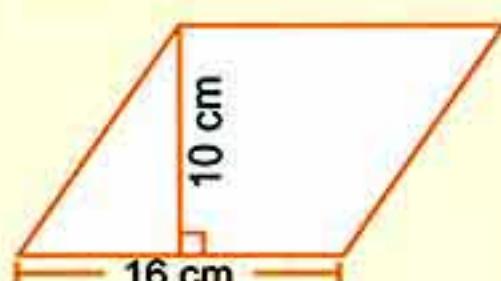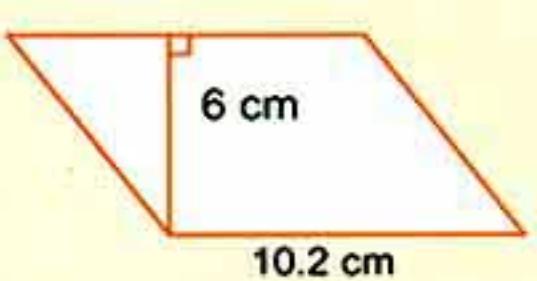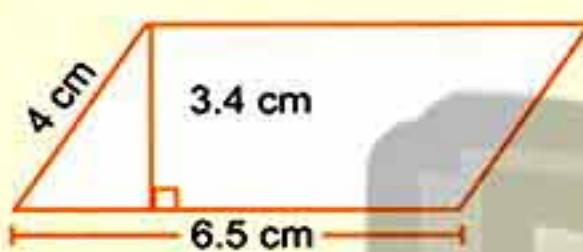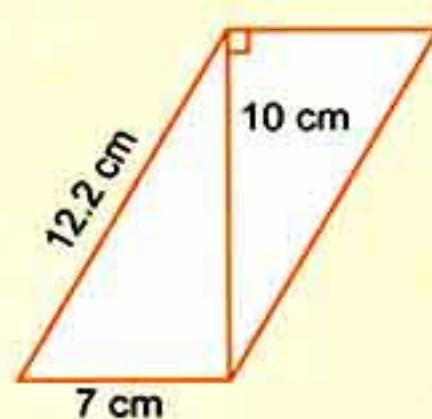
Area = ... × ...... = ... cm².

3 📖 **Complete to find the area of each figure (by using the lattice).**

(1)

(2)

(3)
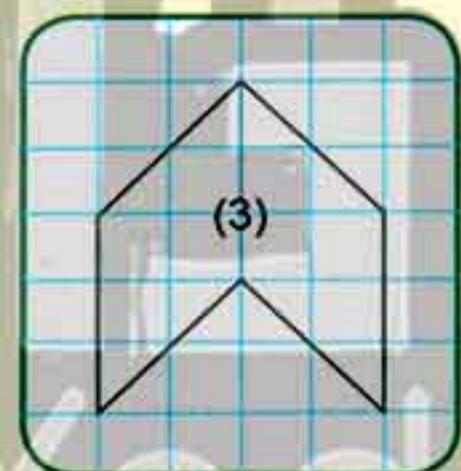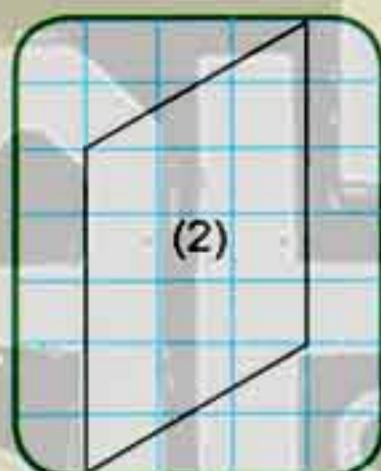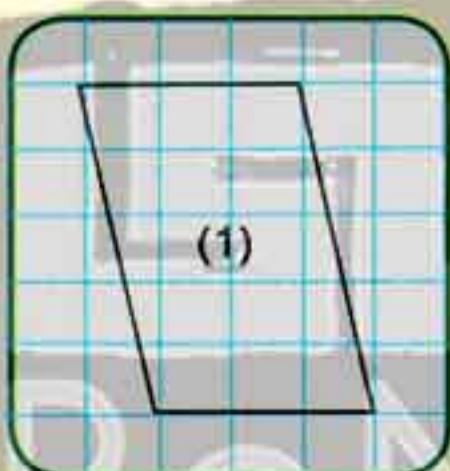
Area of figure (1)   = ... × .... = ... square units.

Area of figure (2)   = ... × .... = ... square units.

Area of figure (3)   = ... × .... + ... × .... = ... + ... = ... square units.

4 📖 **Complete the following table that gives data about parallelograms:**

	Length of the base in cm	Height in cm	The area in cm²
a)	8	3.25	....
b)	6.1	....	54.9
c)	....	4.2	63

(109)

هذا العمل خاص بموقع ذاكرولى التعليمى ولا يسمح بتداوله على مواقع أخرى

5 **Complete each of the following:**

a) The area of a parallelogram = ... × ....

b) The area of a parallelogram with a base length of 8 cm and a height of 5 cm = ... cm².

c) The area of a parallelogram is 36 cm² and the length of one of its sides is 9 cm, then its corresponding height = ... cm.

d) The area of a parallelogram in which the length of one of its sides is 7 cm and corresponding height is 5 cm = ... cm².

e) The area of a parallelogram with a base length of 1 dm and a corresponding height of 4.5 cm = ... cm².

f) The height of a parallelogram corresponding to the base of length 10 cm and its area is 120 cm² = ... cm.

g) 📖 In the opposite figure: ABCD is a parallelogram, CB = 12 cm
AD = ... cm and AM = ... cm.
Area of parallelogram ABCD = ... cm².
Area of triangle ABM = ... cm².
Area of figure MBCD = ... cm².

h) 📖 In the opposite figure, complete:
Area of the parallelogram ABCD = BC × DE = ... cm².
Also, area of parallelogram ABCD = ... × DE.
Deduce the length of $\overline{DF}$ = ... cm
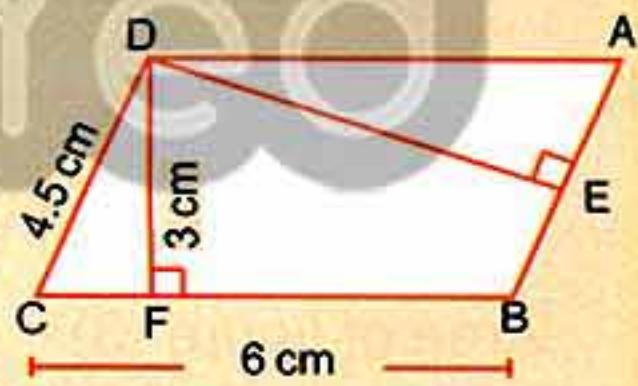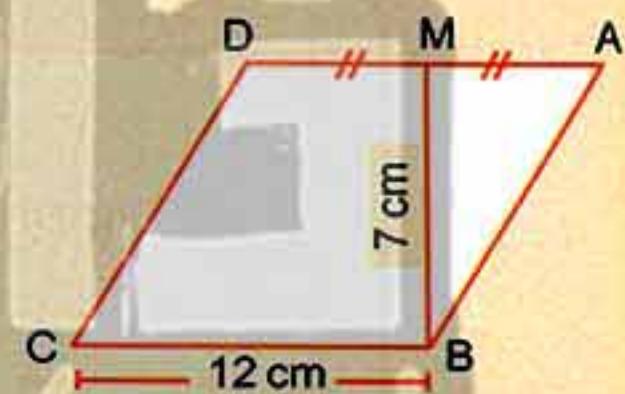
6 **Choose the correct answer:**

a) The area of a parallelogram with a base length of 12 cm and a corresponding height of 3 cm = ... (4 cm² or 15 cm² or 18 cm² or 36 cm²)

b) The area of a parallelogram with a base length of 10 cm and a corresponding height of 5 cm = ... (2 cm² or 25 cm² or 50 cm² or 100 cm²)
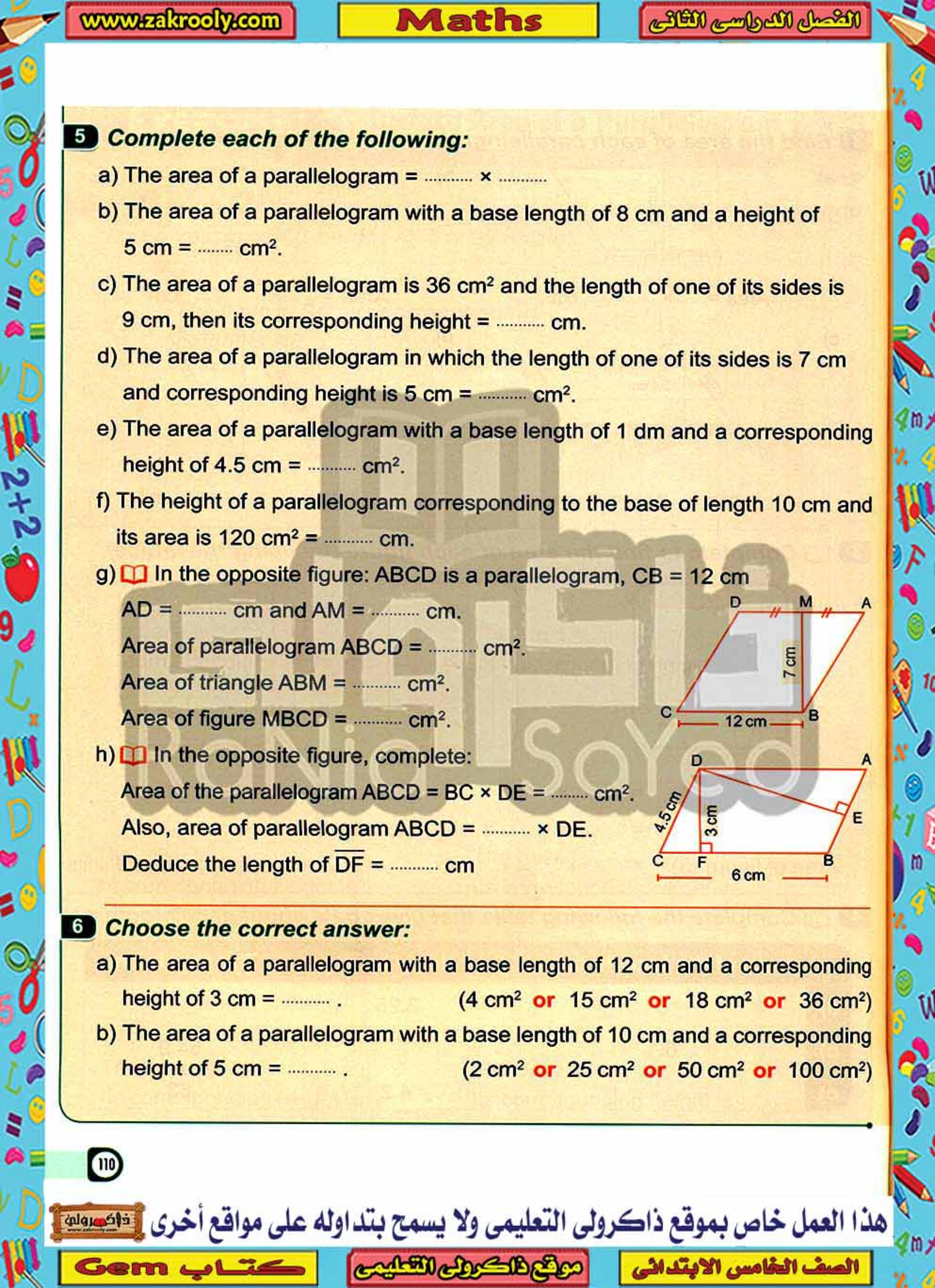
c) The area of a parallelogram with a base length of 24 cm and a
   corresponding height of 15 cm = ...
   (360 cm **or** 360 cm² **or** 240 cm² **or** 180 cm²)

d) 📖 In the opposite figure the area of the
   parallelogram is ....
   (7.6 cm² **or** 12.63 cm² **or** 13.63 cm **or** 13.63 cm²)

e) In the opposite figure:
   1) The area of parallelogram ABCD = ... cm².
      (15 **or** 25 **or** 30 **or** 25)
   2) The area of parallelogram ABFE = ... cm².
      (15 **or** 25 **or** 30 **or** 35)
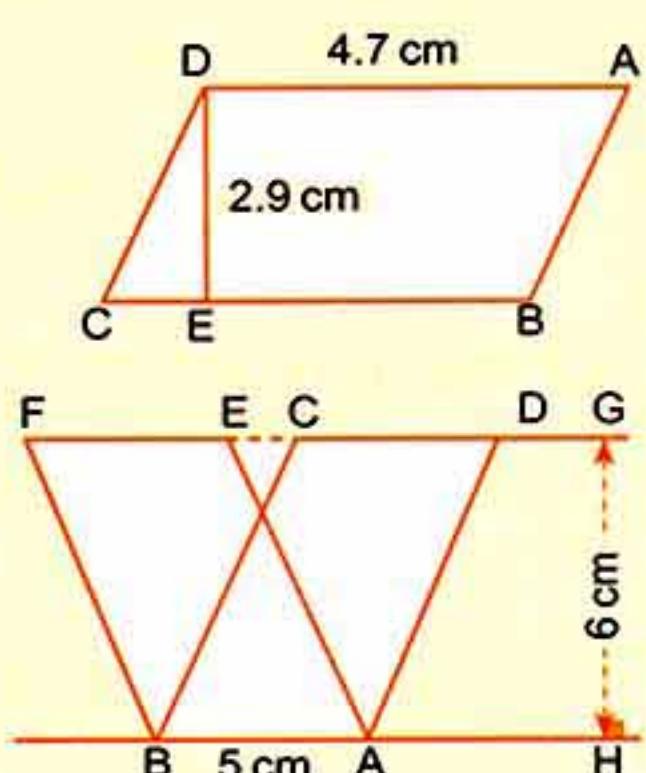
7 📖 If the base length of a parallelogram is 34.7 cm and its corresponding
height is 28.17 cm, find its area approximated to the nearest hundredth.

8 If the base length of a parallelogram is 25.9 cm and its corresponding height
is 12.75 cm. *Find its area:*
a) approximated to the nearest hundredth.
b) approximated to the nearest one decimal.
c) approximated to the nearest unit (whole number).

9 📖 *Which is greater in area?* A parallelogram with a base length of 15.7 cm and
a corresponding height of 9.4 cm, or the area of a triangle with a base length of
14 cm and a height of 18 cm.

10 *Choose the correct answer:*

a If the area of a parallelogram
is 72 cm² and its base length is
12 cm, then its corresponding
height = ... cm.
a) 8 cm   b) 6 cm
c) 10 cm   d) 12 cm

b If the area of a parallelogram is
56 cm² and its height is 8 cm,
then its corresponding length
= .... cm.
a) 7 cm   b) 6 cm
c) 9 cm   d) 28 cm

⑪⑪
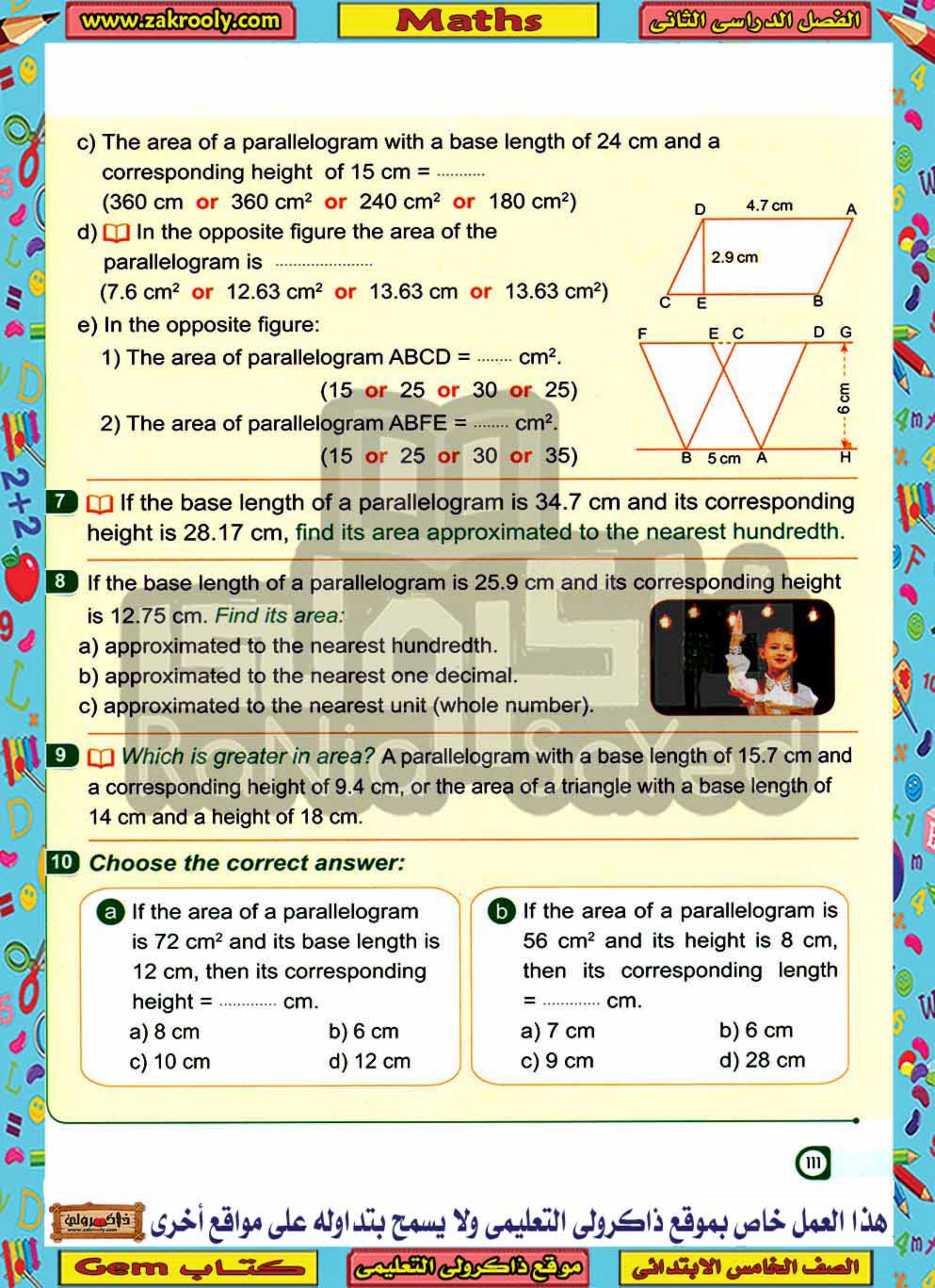
11 📖 In the opposite figure calculate the area of parallelogram ABCD, then find the length of $\overline{BC}$, where:

AB = 10 cm, DE = 12 cm and DF = 8 cm
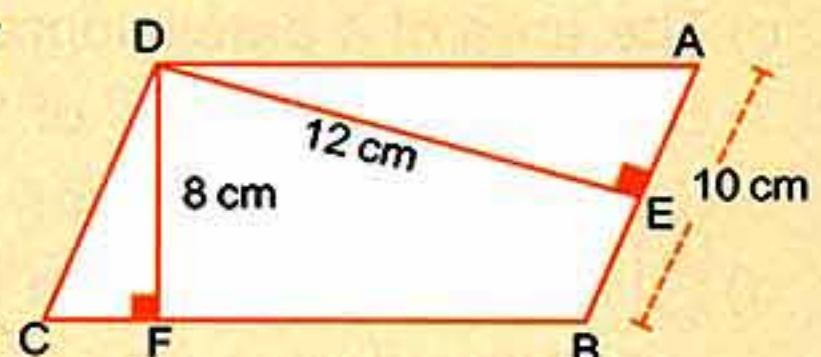
12 In the opposite figure ABCD is a parallelogram in which AD = 12 cm and DC = 9 cm. If $\overline{DX} \perp \overline{AB}$ and DX = 10 cm, calculate the area of the parallelogram and find the height drawn from D to $\overleftrightarrow{BC}$.
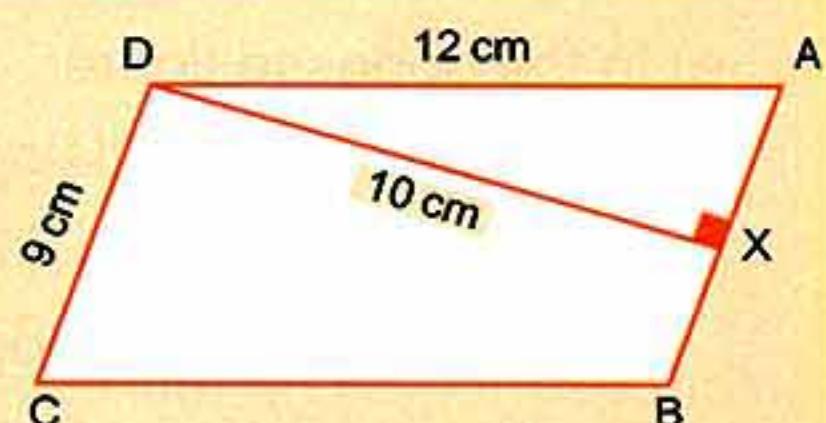
13 In the opposite figure ABCD is a parallelogram where AB = 5 cm, DE = 8 cm and DF = 4 cm.
Find the length of $\overline{BC}$.
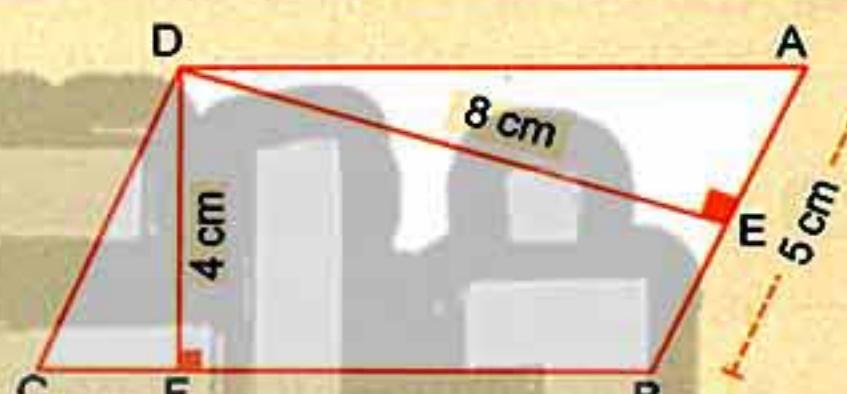
14 The opposite figure represents a piece of land in the shape of parallelogram ABCD, if BC = 25 m, AB = 20 m, $\overline{DX} \perp \overline{AB}$, $\overline{EF} \perp BC$ and EF = 18 m. Find:
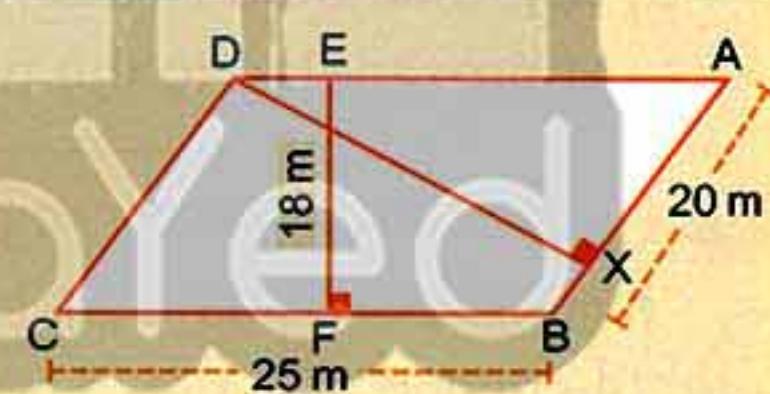
a) The area of the land.

b) The length of $\overline{DX}$.   c) The perimeter of the land.

15 📖 In the opposite figure:

$\overleftrightarrow{AY}$ // $\overleftrightarrow{BX}$, ABCD is a parallelogram and EFXY is a rectangle.

Compare between their areas.

112
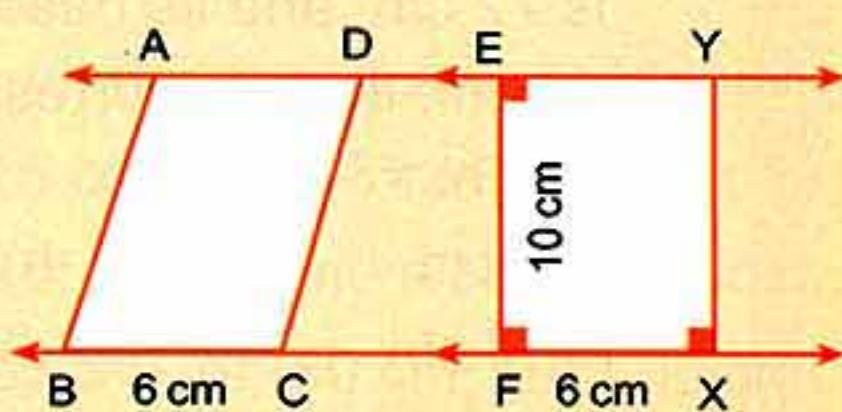
16 In the opposite figure:

ABCD is a rectangle in which AB = 4 cm and BC = 3 cm.

If $\overline{BD}$ // $\overrightarrow{AE}$ and E $\in \overrightarrow{CD}$:

a) Show why figure ABDE is a parallelogram and calculate its area.

b) What is the relation between the area of rectangle ABCD and the area of parallelogram ABDE?

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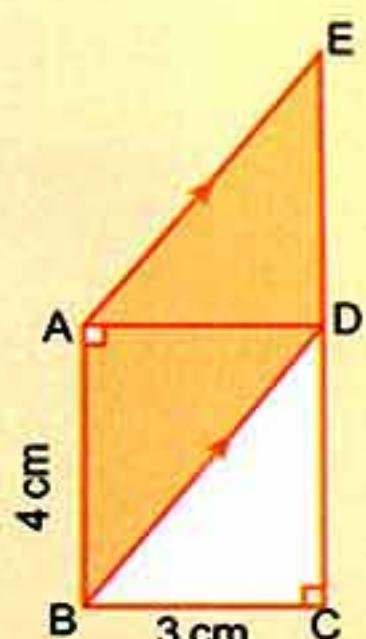
17 In the opposite figure:

ABCD is a parallelogram in which BC = 18 cm,

$\overline{BE} \perp \overline{AD}$ and BE = 7 cm.

If AE = $\frac{1}{3}$ AD, find:

a) Area of parallelogram ABCD.

b) Area of figure EBCD.

---

18 *Patterns: Khaled drew parallelograms according to the following patterns:*

The first: its base length is 2 cm and height is 2 cm.

The second: its base length is 2 cm and height is 4 cm.

The third: its base length is 2 cm and height is 8 cm.

and he continued in the same pattern.

What is the area of the eighth parallelogram?

🏆 **FOR EXCELLENT PUPILS**

19 In the opposite figure: ABCD is a parallelogram.

If the area of ($\triangle$ EBC) + area of ($\triangle$ EAD)

= 120 cm², find the area of $\triangle$ DEC.

113
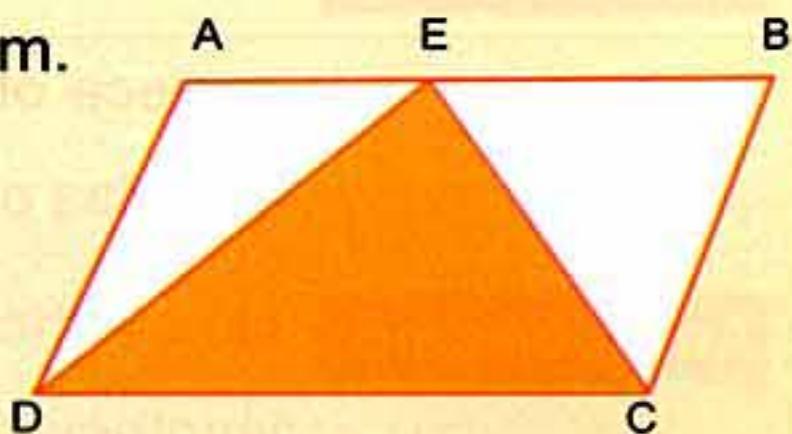
Unit (1)

Worksheet 1 ⟫ Lesson (1) - Unit (1)

20

1 **Complete by using ($\in$, $\notin$, $\subset$, $\not\subset$):**

5

a) 3 .... $\mathbb{N}$

b) {5} .... $\mathbb{N}$

c) 0.7 .... $\mathbb{N}$

d) {0 , 0.7} .... $\mathbb{N}$

e) The smallest counting number .... $\mathbb{N}$

2 **Complete the following:**

5

a) The smallest natural number is ....

b) The smallest counting number is ....

c) The set of natural numbers greater than 7 is ....

d) $\mathbb{N} - \{0\} = $ ....

e) $\mathbb{N} \cup \mathbb{C} = $ ....

3 **Put (✓) or (✗):**

5

a) $3.6 \in \mathbb{N}$ ( )

b) $\mathbb{N} - \mathbb{C} = \{0\}$ ( )

c) The greatest natural number is milliard. ( )

d) $\{0\} \cap \mathbb{N} = \mathbb{C}$ ( )

e) The smallest natural number is 1. ( )

4 **Answer the following:**

5

a) Write the set of multiples of 4 which are less than 16.

b) Write the set of multiples of 5 which are less than 30.

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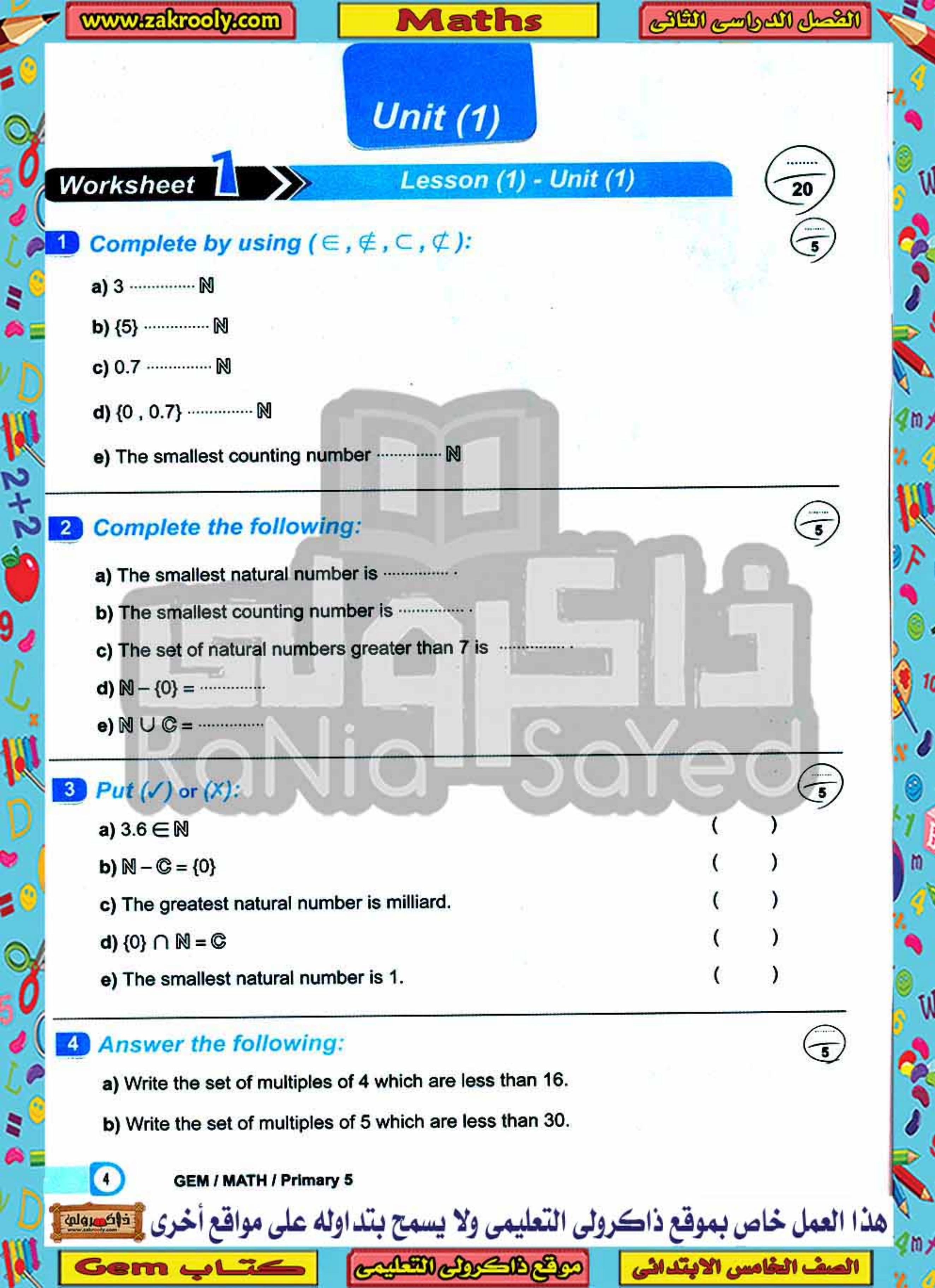
Worksheet 2 >> till Lesson (2) - Unit (1)

$\dfrac{\ldots}{20}$

1 **Choose the correct answer:** $\dfrac{}{5}$

a) $\mathbb{O} \cap \mathbb{E} = \ldots\ldots\ldots$ ($\{2\}$, $\mathbb{O}$, $\mathbb{E}$ or $\varnothing$)

b) $\mathbb{O} \cup \mathbb{E} = \ldots\ldots\ldots$ ($\mathbb{C}$, $\mathbb{N}$, $\mathbb{O}$ or $\mathbb{E}$)

c) $\mathbb{N} - \mathbb{E} = \ldots\ldots\ldots$ ($\mathbb{N}$, $\mathbb{C}$, $\mathbb{O}$ or $\mathbb{E}$)

d) The smallest prime number is $\ldots\ldots\ldots$ (0 , 1 , 2 or 3)

e) $\mathbb{E} \ldots\ldots\ldots \mathbb{N}$ ($\in$, $\notin$, $\subset$ or $\not\subset$)

---

2 **Complete by using (even, odd, prime or nothing):** $\dfrac{}{5}$

a) Even number × even number is $\ldots\ldots\ldots\ldots\ldots$ number.

b) The smallest prime number is $\ldots\ldots\ldots\ldots\ldots$ number.

c) Any prime number except (2) is $\ldots\ldots\ldots\ldots\ldots$ number.

d) If x is an odd number, then $(x - 1)$ is $\ldots\ldots\ldots\ldots\ldots$ number.

e) If x is an even number, then $(x + 1)$ is $\ldots\ldots\ldots\ldots\ldots$ number.

---

3 **Put (✓) or (✗):** $\dfrac{}{5}$

a) The smallest prime number is 3.   (   )

b) $\mathbb{P} - \mathbb{O} = \{ 2 \}$ (   )

c) $\mathbb{N} - \mathbb{O} = \mathbb{E}$ (   )

d) $\mathbb{N} \cap \mathbb{O} = \mathbb{N}$ (   )

e) The number of 5th grade students $\in \mathbb{N}$ (   )

---

4 **Write by the listing method:** $\dfrac{}{5}$

a) $\mathbb{N}$ b) $\mathbb{O}$ c) $\mathbb{E}$ d) $\mathbb{P}$

Worksheet 3 ➤➤   till Lesson (3) - Unit (1)   (20)

1 **Complete each of the following:** (5)

a) The number which lies to the right of 6 directly on the number line is ....

b) If a lies to the left of b directly on the number line, then a .... b.

c) $\mathbb{C} \cup \{0\}$ = ...

d) $\mathbb{E} \cap \mathbb{P}$ = ...

e) $\mathbb{E} \cap \mathbb{O}$ = ...

2 **Arrange the following numbers ascendingly, then represent them on the number line:** (5)

a) 3 , 0 , 5 , 2 and 1   b) 2 , 7 , 3 and 1

3 **Choose the correct answer:** (5)

a) $\{0 , 2 , 5 , 4\}$ .... $\mathbb{N}$ ($\in$, $\notin$, $\subset$ or $\not\subset$)

b) The number of classes of a school .... $\mathbb{N}$ ($\in$, $\notin$, $\subset$ or $\not\subset$)

c) If a lies to the right of b directly on the number line, then a .... b   ($>$, $=$, $\geq$ or $<$)

d) The smallest counting number is ....   (0 , 1 , 2 or 3)

e) $\mathbb{E} \cup \mathbb{O} = $ ....   ($\varnothing$, $\mathbb{N}$, $\mathbb{C}$ or $\mathbb{E}$)

4 **Write by using the listing method, then represent on the number line:** (5)

a) $X = \{a : a \in \mathbb{N} , 0 \leq a \leq 3\}$

b) $Y = \{a : a \in \mathbb{N} , a$ is a prime factor of the number 15 $\}$

c) $Z = \{a : a \in \mathbb{N} , a \geq 3\}$

d) $W = \{a : a \in \mathbb{N} , a > 5\}$

e) $L = \{a : a \in \mathbb{N} , a$ is an even number greater than 5$\}$

Unit (3)

Worksheet 10 >> till Lesson (1) - Unit (3)

20

1 *Complete each of the following:* 5

a) The area of a triangle = $\frac{1}{2}$ × .... × ....

b) 5, 25, 45, ... in the same pattern

c) If X = {$x : x \in \mathbb{N}$, $0 < x \leqslant 4$} , then X = ...

d) The area of the triangle whose base length is 5 cm and its height is 4 cm = ...

e) If 5 + x = 11, then x = ...

---

2 *Choose the correct answer:* 5

a) (7 × 0) .... $\mathbb{N}$ ($\in$, $\notin$, $\subset$ or $\not\subset$)

b) The height of the triangle whose area is 20 cm² and base length is 4 cm = ... cm.

(80 , 24 , 16 or 10)

c) $\mathbb{O} \cup \mathbb{E}$ = ...   ($\mathbb{O}$, $\mathbb{E}$, $\mathbb{N}$ or $\emptyset$)

d) If the perimeter of a rectangle is 32 cm and its length is x cm, then its width = ... cm²

($32x$, $\frac{32}{x}$, $16 - x$ or $16 + x$)

e) If the perimeter of an equilateral triangle is 18 cm and its height is 8 cm, then

its area = ... cm²   (10 , 24 , 48 or 144)

3 *Use the distributive property to find the result of:* 101 x 78 5

---

4 *In the opposite figure:* 5

ABC is a triangle in which

$\overline{AD} \perp \overline{BC}$, $\overrightarrow{BE} \perp \overleftrightarrow{AC}$, BC = 20 cm,

AC = 16 cm and AD = 8 cm. **Find:**

a) The area of △ABC.

b) The length of $\overline{BE}$.

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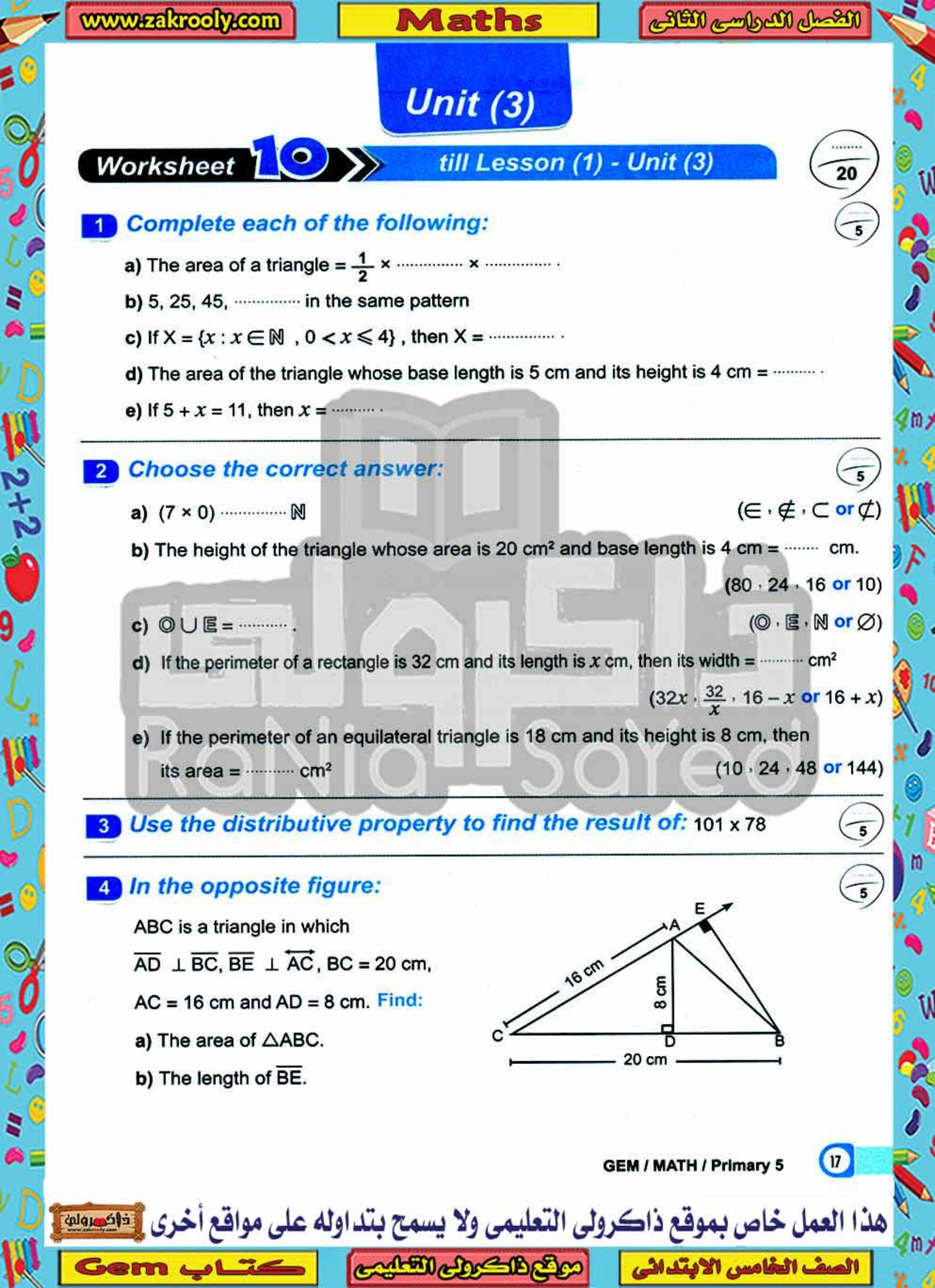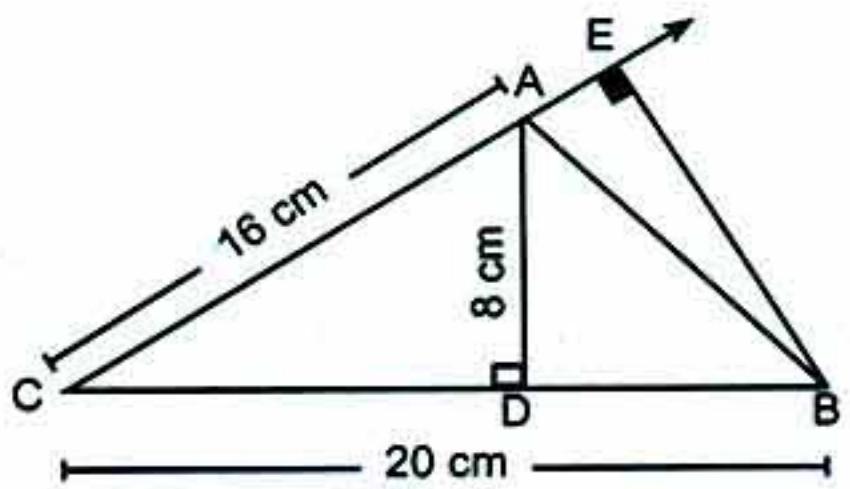
Worksheet **11** >> till Lesson (2) - Unit (3)

(........ / 25)

1 **Complete each of the following:** (....... / 5)

a) The smallest natural number is ....

b) The area of a parallelogram = ... × ....

c) If $14 - x = 8$, then $x = $ ....

d) 1, 4, 9, 16, ... (in the same pattern)

e) The area of the parallelogram whose base length is 7.5 cm and its height is 10 cm
= .... cm².

---

2 **Choose the correct answer:** (....... / 5)

a) $\{0, \frac{1}{2}, 1\}$ .... $\mathbb{N}$ 　　　　　　　　($\in$, $\notin$, $\subset$ or $\not\subset$)

b) If the product of two numbers x and y is 8, then $x = $ .... 　　($\frac{8}{y}$, $\frac{y}{8}$, 8y or y + 8)

c) The area of $\square$ABCD where AB = 8 cm, BC = 12 cm and the greater height = 6 cm
is .... cm². 　　　　　　　　　　　　　　　　　　　(24 , 48 , 72 or 96)

d) $(4 × $ ...... $) × 78 = 7800$ 　　　　　　　　　　　　　　(5 , 25 , 50 or 125)

e) If the area of a parallelogram is 24 cm² and its base length is 6 cm, then the
corresponding height to this base = ... cm. 　　　　　(3 , 4 , 8 or 12)

---

3 **Which is greater in area?** (....... / 5)

The parallelogram whose base length is 12 cm and height is 9 cm **or** the triangle
whose base length is 14 cm and height is 13 cm.

---

4 a) If a = 35, b = 18 and c = 65, then **find the value of: a x b + b x c** (....... / 5)

b) **Solve the equation:** $\frac{1}{3} x + 1 = 5$

---

5 **In the opposite figure:** (....... / 5)

ABCD is a parallelogram in which AD = 24 cm,
E is the midpoint of $\overline{AD}$, the area of △ABE = 60 cm².

Find:
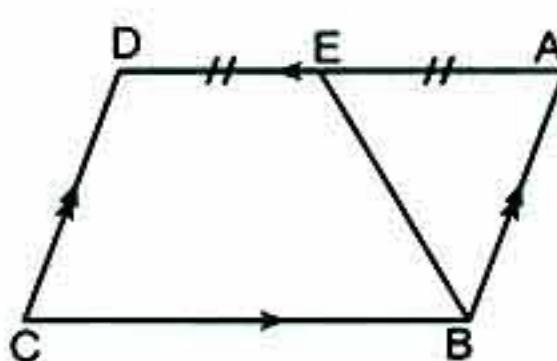
a) The area of $\square$ABCD.

b) The area of the figure EBCD.

18　　**GEM / MATH / Primary 5**